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ACCIDENTS AND EMERGENCIES

THOMAS BLACKSTONE, M.,D.



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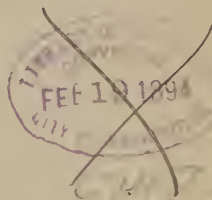
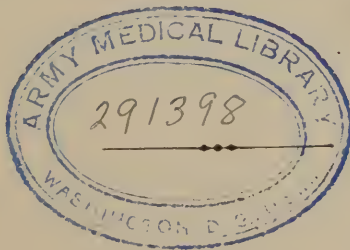
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ACCIDENTS AND EMERGENCIES.

WHAT SHOULD, AND SHOULD NOT, BE DONE
BEFORE THE DOCTOR COMES.

BY

THOMAS BLACKSTONE, M. D.

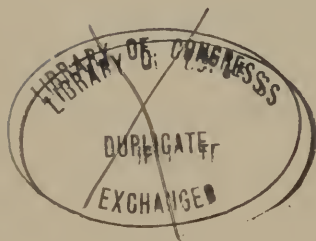


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INTRODUCTION.

WHEN the writer urged Dr. Blackstone—in whose professional ability he had the fullest confidence—to write the series of articles embodied in this book, he was influenced by his own trying experiences in 1887, when living with his family on his Belle Fourche pre-emption claim in the Territory of Wyoming. Neighbors there were none, save cowboys at the widely scattered ranches, ten to twenty and thirty miles apart. Mrs. A. B. Clark, the courageous daughter of the Reverend James Mitchell, of the Ohio Conference, was sometimes with her husband at his headquarters on Black Thunder, fifteen miles distant, but unfortunately not during their sojourn at G—M. Besides her there was not a woman nearer than Powder River or Wind River, forty and fifty miles away. The nearest residence of a doctor was Buffalo or Fort Fetterman, almost a hundred miles distant.

The country was alive with rattlesnakes; over a hundred rattles, averaging five beads to a rattle, being the trophies of a single raid by the writer and four of his G—M men, on a den discovered on the summit of a high, rocky mound, called thereafter “Rattlesnake Butte,” not a mile from his

cabin. It was also infested with coyotes and gray wolves, interspersed with occasional bear and mountain lion.

There were thousands of antelope, many deer, a few buffalo, and in the timber, the majestic elk.

Sage-hens were abundant on the plains, and the ponds and creeks were populous with ducks.

Indians—Sioux, Cheyennes, and Arapahoes—leaving their reservations, made unexpected and frequent hunting excursions in their vicinity. They were supposed to be friendly.

Cattle and horse thieves had their lurking-places, lookouts, and trails in the lonely reaches from the Pumpkin Buttes to the Devil's Tower.

Broncho Bill, Toothless Kid, and countless other picturesque cowboy characters, chiefly from New Mexico and Texas, kind-hearted, reckless, or desperate, as occasion suited, loaded down with six-shooters and cartridge-belts, rode the range, at home wherever they flung the reins over the heads of their tough and well-trained ponies, assuming that your ranch hospitality was unqualified, and your supplies exhaustless.

Now, with your wife and little children in a cabin-home like that, "accidents and emergencies" were not improbable events. Fire-arms were a necessity.

Whilst the writer was examining his double-barreled shotgun one day, his little ones by his side, somehow one barrel was discharged, its contents plowing a great furrow in the

floor at their very feet. He grew sick and faint at the thought of the terrible accident so narrowly averted, and help so far away.

At another time one of his sons took hold of an empty cracker-box in their grassy camp, and heard the warning rattle just in time to escape the deadly fangs of the snake coiled up within.

Afterwards, the little four-year-old was discovered rounding up another rattler, which was making directly for the open cabin-door, and which his little sister bravely dispatched.

Now, the mother was no mean disciple of Hahnemann, and had her domestic remedies well in hand. But they had not and did not know where to secure just such a *vade mecum* as this little volume by Dr. Blackstone. They would have felt happy and rich in its possession.

But not alone in such exceptionally remote and exposed situations will this little book be valuable, but in city, town, country, everywhere. For everywhere accidents happen and emergencies arise; and it is often the condition of life itself to know what to do until the physician can be brought.

DAVID H. MOORE.

EDITORIAL ROOMS, *Western Christian Advocate*, }
CINCINNATI, OHIO, 1894. }

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ACCIDENTS AND EMERGENCIES.

I.

EXPLANATORY REMARKS.

AN interval of time always elapses between the receipt of an injury, or the arising of an emergency, and the moment when a physician can be called and take actual charge of the case. The length of this interval, of course, varies according to the surrounding circumstances. It may be but a very few minutes, or it may be many hours. To give general directions as to how the unprofessional bystanders can utilize this space of time, be it long or short, to the best interests of the unfortunate, is the object of the following articles. After the doctor has arrived, so far as any directions, or even suggestions, as to treatment are concerned, we shall have nothing further to do with the case. We will leave the patient entirely in his hands. It can therefore be readily seen that these papers are not to be of the "every man his own doctor" style.

The old saying that "a little knowledge is a dangerous thing" is not true now, nor has it ever been. Information of itself can never work injury to its possessor. On the con-

trary, in medical matters at least, the want of a very little knowledge has often lost human life. It is the presuming of great knowledge because of the possession of a little that is the dangerous thing. Your having enough medical knowledge to enable you to know where to make pressure to stop the bleeding from a large artery, and thus even for a time save life, does not warrant you in concluding that you can permanently close and treat the injured vessel properly. Every intelligent person should know how to do the former, but it is only necessary that a small per cent of the community should be able to do the latter.

The directions given in these articles are intended to aid the physician, not supersede him. They are intended to supply such information as will enable you to act intelligently during the trying wait, which often seems longer than it really is, from the time of the receipt of an injury by your friends or neighbors, or even yourself, to the moment when your anxiety and responsibility cease by the arrival of a physician, upon whose shoulders the management of the case must afterwards rest. The admonition is always given for you, on such occasions, "to keep cool;" but I can really see little difference as to whether you keep cool or hot so long as you do not know what to do any way. Keeping cool will not give, nor becoming excited take away, knowledge that you never possessed. What you want to do is to inform yourself upon such subjects before the occasions

arise for their application. Then the advice to keep cool will apply in full force; for in that condition alone will you be able to use your knowledge to the best advantage, even to the saving of the life of a fellow-being.

Upon the occurrence of a serious emergency that calls for the speedy presence of a physician, the messenger sent for him should be a person of some intelligence. He should be able to give a reasonably accurate description of the injury to be treated, so the medical man may know what it will be necessary to take with him in order to treat the case properly. This especially applies to accidents far out in the country, where the delay in sending back to the office for necessary articles or appliances might cause great delay and inconvenience, even if nothing worse. The messenger should certainly be able to give directions as to the quickest and best route by which the patient can be reached, and, in very urgent cases, it is far better for him to go in a buggy or other vehicle, in which he can bring the doctor back with him at once, thus often saving valuable time.

Specific directions will be given in succeeding articles for your guidance in particular injuries and emergencies there to be enumerated and explained, but it will be well here to give some general rules for you to follow while awaiting the doctor's arrival that are applicable in all cases alike. However much the bystanders or friends may be excited and alarmed, they should always try to show as little of it to the sufferer

as possible. Loud and unreasonable manifestations of grief, often, by their depressing effect on the mind of the injured, cause great harm and lessen, in a marked degree, the chances of recovery.

A bleeding limb should always be placed in an elevated position above the rest of the body, the patient lying, when the recumbent position is necessary, on the back, with the wounded arm or leg supported on pillows, boxes, or something of the kind; extended almost straight up, if the bleeding is at all severe. Be always careful to make everything as comfortable as possible, so there will be little need of often changing the position. This is very important; for, by moving the limb about, and thus breaking or loosening any clots that may have formed, the bleeding will almost invariably be increased. For the same reason it is far better to support the injured part in some other way than by means of the hands of some friend; for, however good the intention and desire, there will of necessity be some slight shifting of position that can hardly fail to do harm.

In almost all cases where there is a lack of blood in the brain, indicated by paleness of the face, sickness at the stomach, vomiting and often fainting, as in severe bleeding, the patient should lie down at once with the head as low as, or lower than, the rest of the body. That is nature's treatment for such cases. Any clothing about the body or neck interfering in any way with the breathing should be loosened.

It should always be remembered that, after any injury involving great loss of blood or shock to the system, one can not endure cold so readily as the well persons standing about. In the cooler months, therefore, care should be taken to make such patients comfortable by artificial heat in some form. Let no over-officious person try to do too much. When you do not know exactly what to do, it is generally far better to do nothing at all.

While awaiting the physician, many things should be attended to. Plenty of soft linen or old cotton rags should be hunted up, and clean rain-water warmed, so as to be ready if needed. If the injury is to be dressed at night, special care should be taken to see that all lamps about the house are in perfect working order. This will be doubly necessary when any arteries are to be tied, or other operation performed requiring a good light. Your main object should be to hand the patient over to the doctor, on his arrival, in the best possible condition. If you do that, you will have done your whole duty. In the succeeding articles their order of arrangement will be about as follows:

After a definition of the subject to be treated, will follow its causes, symptoms, and, finally, the treatment, with any other remarks that seem to be pertinent. The word *Treatment* will be in italic type, so it can be more readily found when needed.

II.

CIRCULATION OF THE BLOOD—BLEEDING FROM VEINS— DRESSING SLIGHT WOUNDS.

Circulation of the Blood.—The blood in the body is contained in three classes of vessels—arteries, veins, and the little capillaries. Bleeding that comes from capillaries can not be very severe, and from veins alone, as a rule, is easily controlled; so the only dangerous form of bleeding almost always comes from severed arteries. Your ability, therefore, to pursue an intelligent course, especially in regard to the necessity or urgency of calling a physician, will depend entirely upon your capacity to distinguish between these different forms of bleeding. In order to understand perfectly the great differences between them, a general knowledge of the course of the blood in its circulation throughout the body is necessary. This is not so difficult to understand as many suppose. It may be divided into four stages, and, in brief, is as follows:

1. The bright red blood leaves the heart, which acts as a pumping engine, through the arteries, and, by them, is distributed throughout the body.

2. The arteries, as they grow smaller and smaller, empty the blood into the fine capillaries; in which vessels it collects

the impurities of the body, thereby being turned from a bright red to a dark red color.

3. These capillaries empty this dark blood into the smaller veins, which, growing larger and larger, in turn empty it into the heart again.

4. This impure blood, which the veins have brought back to the heart, is now sent to the lungs for purification by means of the air which we breathe, but is at once returned to the heart a second time, from which it is started out as before through the arteries; repeating this circulatory and purifying process over and over again as long as life lasts.

Fortunately there are two very prominent features that will aid you in determining quickly whether the blood be coming from a vein or an artery. First, the color of the blood itself; and, second, the manner in which it flows out of the wound. By the aid of the two together, you need not make any very great mistake. When the blood is of a dark, sometimes almost black color, and flows in a steady stream, you may know that it comes from veins alone. But when it is of a bright red color, and is thrown out in quick jets or spurts, you can rest assured that an artery of some size has been cut. Of course, any one might be mistaken in regard to the color of the blood, and therefore, from that sign alone, be uncertain as to the kind of a vessel that it came from; but if this spurting is present, or you can see it well up from the bottom of the wound in distinct impulses you can not

possibly go wrong in concluding that an artery of some size has been wounded.

The number of arteries in the body liable to be cut, and thus endanger life from loss of blood, are really very few in number, and, in order to make these articles of any actual value for your guidance, in case of injury to any of them, they must be taken up one at a time and special directions given for each. This will be done in succeeding articles; but the remainder of this will be devoted to considering the best means of controlling the bleeding from veins, which, as I said before, is rarely great enough to endanger life.

Bleeding from Veins.—In cases where veins alone are injured, the severity of the wound in other particulars, as well as that of the loss of blood, will generally decide you as to the necessity of consulting a physician. Of course, when it is the intention at once either to call a doctor or send the patient to him, your desire and efforts should be simply to staunch the bleeding by temporary means, rather than put on dressings that are intended to be permanent.

Treatment.—The bleeding that comes from veins alone may almost always be controlled by means of a pad, made of several layers of torn linen or old cotton rags, laid directly over the wound itself, and held in place by broad bandages wound firmly, but not too tightly, around the injured limb,

or even about the entire body if necessary. This pad for controlling the bleeding should cover a space much larger than the wound itself; and, after it is put on and secured in place, the patient should refrain from moving about as much as possible. After this the general directions given in the first article, for controlling bleeding by elevating the wounded limb above the rest of the body, should be followed. When a physician is expected to take charge of the case at all, do not attempt anything beyond what I have stated to stop the bleeding, nor make any efforts to treat the wound itself. Pressure alone, aided by the coagulating blood becoming entangled in the fibers of the pad, which should be held firmly and persistently in place, will be by far the best and surest means at your disposal to control the bleeding. Above all, do not allow any one to make a bad wound worse by putting in it tobacco, turpentine, or anything of the sort. They not only do harm by keeping the cut open while they are being put on, and thus directly encourage the bleeding, but they can, in the end, scarcely fail to keep the wound from healing as quickly and certainly as it otherwise would do.

Dressing Slight Wounds.—In closing this subject, it will not be out of place to mention some points that should be observed in caring for the little injuries that are not usually deemed of sufficient importance to call for the attention of a physician. In dressing such, you should first see that

all dirt and other foreign substances are removed from in and about the wound, and that the edges are brought as nearly together as possible. Then carefully lay a rag, of only one thickness, and just a little larger than the wound itself, directly over the cut. On top of this place other rags considerably larger than the first. The object of this is that, as the outer ones become soiled, they may be removed and others substituted; but the one next the wound should be left in place for several days, and then, as a rule, only when it loosens itself should it be gently and carefully removed. At that time, in a vast majority of cases, the wound will be found almost completely healed, so that it will need little more attention. Some may think that such minute details are entirely superfluous, but, from experience, I know the contrary.

There is a feeling among people in general that something should always be put into a fresh wound "to make it heal." It often seems to be the opinion that to do this is about the most important duty the doctor is expected to perform, and, if he fails to attend to it at once, he is very ignorant indeed. Hence, whether a physician is sent for or not, the most varied things imaginable are placed in and about the cut for this purpose—turpentine, vinegar and salt, soot, arnica, horribly nasty quids of tobacco, rancid salves, and even filth from the cow-lot. But be it remembered by all that the blood itself is the finest dressing by far

that has ever been found for fresh wounds. It is elastic and soft, and, in drying, contracts so as to draw the cut edges closely together, and then seals the whole up air-tight. Nothing else known can answer the purpose nearly so well, nor take its place.

III.

BLEEDING FROM ARTERIES—OF THE HEAD AND NECK.

Bleeding from Arteries.—One of the most appalling sights that one can ever witness is the gushing of great quantities of bright red blood from a severed artery of the larger size. If you do not lose your senses at such times and do foolish things, you can be relied on under all other circumstances of an exciting nature. Arteries are simply round, elastic tubes or pipes coming directly from the heart in as straight lines as it is possible for them to be placed and, at the same time, reach all parts of the body. The blood in them, therefore, is impelled forward by the entire strength of the force-pump action of the heart, which is a collection of muscles of prodigious power. The blood in the veins, on the contrary, has no such force behind to drive it forward, but flows onward with scarcely any strength of current. It can readily be seen, then, that the means for stopping the two forms of bleeding must be entirely and radically different.

As was shown in the last article, about all that is needed to stop bleeding from veins is a pad of some kind laid directly over the wound itself, and held in place by almost any means. In fact, this form of bleeding will usually stop of

its own accord, without very great loss of blood, when given a chance to do so. But such is not the case with cut arteries. Even when of no larger size than a knitting-needle, they will often continue to bleed till tied, or the open end closed by some other surgical means. As the blood in the arteries is always flowing in a direction *from* the heart, you will see that any pressure made to stop bleeding from them *must be made between the cut end of the vessel and the heart itself*. This is the great and important point that all should know. Even if you are making pressure, in such a case, with a bandage and pad directly over the wound itself, you should make most of the pressure over the edge next to the body. When you know this, and keep your senses about you enough to apply the knowledge intelligently, you need have little fear but that you can control almost any bleeding long enough to obtain assistance.

With strict adherence to truth it may be said that in most cases of severe bleeding the appearance is out of all proportion to the actual danger; a pint of blood, at such times, multiplying itself into many gallons in the excited minds of those present. Very few persons actually bleed to death. A kind Providence has interposed many obstacles to such catastrophes. The large arteries are all placed in deep and protected parts of the body; and generally the instruments of injury that reach them, as bullets, or the crushings and tearings of machinery and heavy wheels, lacerate instead of cut

them, thus leaving the ends ragged and twisted, so that the blood is caught and impeded, and often stopped entirely for a long time, on its way out. A sharp pointed weapon that enters the body far enough to reach any of the large arteries must strike them fairly in the center in order to penetrate; for if it goes a very little to one side, the vessel, being harder than the surrounding tissues, rolls out of harm's way. Great loss of blood always induces fainting, and while one is in this condition, the heart acts very feebly, so that the blood is not driven onward with any force, thus lessening in a marked degree the danger of a fatal termination. Taking all these things together, it will readily be seen how little is the real danger of death from bleeding. It should also be remembered that any blood lost in this way is readily and quickly replaced, in a healthy person, so that the injury is only of short duration.

We will now take up, briefly and in detail, the different arteries of the body, and give directions as to the means by which you would be most likely to arrest, for a time at least, serious bleeding from them. As a rule, we will give but one method, and that the easiest applied as well as the one most likely to be effective. In this way it is hoped to avoid all confusion of ideas, and thus make your knowledge of practical value in case you should have a chance to apply it.

Bleeding from the Head.—Of the arteries that pass over the head itself none are very large, yet, owing to the thick-

ness and hardness of the skin that surrounds them they often bleed, when cut, freely and persistently.

Treatment.—Pressure against the skull by means of a solid pad of some kind, placed directly upon the wound itself, and bound tightly in place with a bandage passing entirely around the head, will always control it. The artery that passes up the side of the head in front of the ear often bleeds excessively, but can readily be checked by pressure applied, as stated above, till a doctor can be called.

Bleeding from the Neck.—One of the most horrible accidents that can ever be witnessed is the cutting of one of the large arteries at the side of the neck. These are of the largest class, and are among the few that may cause death quickly; not only on account of their size, but because of the difficulty of controlling the bleeding from them. People generally speak of these vessels as the “jugular veins;” but it is the artery that lies under the vein that is so dangerous. Bleeding from the vein alone can be controlled here, as in other places, by means of a large pad held persistently and firmly in place directly upon the wound itself.

Treatment.—Your only chance at all for stopping the bleeding that comes from these arteries, there being one on each side of the neck extending from just in front of the ear down to the top of the breast-bone, will consist in trying to

plug up the end of the cut vessel in some way. This should be done by seizing anything in the way of goods that may be nearest at hand, such as a handkerchief, towel, rags, or, if necessary, a piece torn from your own clothing; and whatever you do get hold of should be stuffed into the wound as hard as you can. The patient should sit with the back of his head against something solid, so your pressure can be exerted with full force. Of course it is needless to say, that in case you succeed in checking the bleeding, your pressure should not be relaxed, nor the plug allowed to become loosened or get out of place. This is the only way at your disposal for checking such alarming bleeding; and the chances are that, unless you have extraordinary nerve and quickness of intelligence, you will not succeed very well, but then the effort is fully worthy of a fair trial, for a human life will depend on it.

Fortunately this terrible accident is rare indeed, as the neck can be so readily protected by the hands. Generally such wounds are self-inflicted in efforts at suicide. These are the cases in which a perfectly reliable messenger should always be sent for the nearest physician, ready to bring him back to the patient in the shortest time possible, and able to warn him as to the nature of the trouble he is expected to treat before he leaves his office. Even if the case seems to you hopeless, you should not relax your efforts till the physician is actually present.

IV.

BLEEDING FROM ARTERIES CONTINUED—OF THE HAND, ARM, AND SHOULDER.

BLOOD is supplied to the arm from a large artery that comes out at the top of the chest, under the middle of the collar-bone, and, passing through the armpit, goes on down the front of the arm as it hangs naturally at the side. The course of this artery is shown by the dotted line in Fig. 1.

Bleeding from the Hand.—This form of bleeding is generally very easily controlled.

Treatment.—When the cut is on the inside of the hand or between the fingers, take a small object, as a stone or potato, the size of the thumb of the person wounded, and, after wrapping a handkerchief about it, place it in the palm of the injured hand, and close the fingers tightly over it. About the fist thus made bind a handkerchief or two, or something of the kind, as firmly as it can well be borne. Then elevate the hand, thus dressed, above the head, and you will find that the bleeding almost invariably ceases, and the wound becomes comfortable.

If the cut should be on the side or back of the hand, be-

gin the same as above ; but after closing the hand, and before putting on the final covering, place a thick pad of several folds of goods immediately over the wound itself, and then bind over the whole, as before, several handkerchiefs or other suitable cloths.

Bleeding from the Arm.—Moderate bleeding from the arteries of the wrist, or from the arm below, at, or just above the elbow, can often be checked till medical assistance can be obtained, by means of a pad of rags pressed hard into and over the wound itself, and the whole wrapped firmly into place with broad bandages of some suitable material. It is always best to begin this bandaging at the fingers, and then extend it on up beyond the wound, covering the entire arm completely and making equal pressure throughout. But if the cut is very extensive and painful, or if it is impossible from any other cause for you to control the bleeding by pursuing this course, you must at once take measures to make pressure on the artery as it comes down on the front side of the upper part of the arm. Any bandages that you have already put on over the wound itself should be left in place, as they will aid more or less in retarding the escape of blood.

Treatment of Dangerous Bleeding of the Arm.—The course of the blood in the arteries being always away from the

heart, pressure, therefore, that is intended to stop bleeding of the artery of the arm must be made up near the shoulder. The best point at which to make this pressure is on the front of the arm just below the armpit, for there the artery is more easily reached than anywhere else. Take a large handkerchief or towel, make a knot in its middle and then tie it loosely around the arm just below the shoulder, placing the knot over the artery as it leaves the armpit, at point "A," where the ends of the fingers are, in Fig. 1.

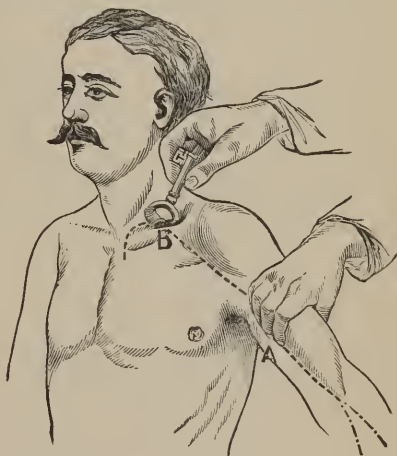


FIG. 1.

Now take a stout stick, a foot or so in length, and thrust it through between the bandage and the arm on the opposite side from the knot. Begin slowly to twist this stick about, so as to tighten the bandage, till the knot sinks deep into the flesh directly over the artery. As soon as you see that the bleeding has been checked, you should wait awhile, so as to only put on enough pressure to stop the bleeding, and no

Dotted line shows the course of the artery that supplies the arm; "A" and "B" the points at which pressure should be made to control bleeding from the arm and shoulder.

more. Of course the stick should be retained in place, and can be tightened still more if the bleeding should be renewed. This effective means of controlling bleeding is generally, though incorrectly, called the tourniquet, and by this name it will be known in these articles. A more definite idea of how this tourniquet is applied, can be obtained by examining Fig. 2 in the next article. It is rather a painful proceeding, but then, on such occasions, one can not be over particular; besides it is only intended as a temporary measure to keep the patient alive till a physician can be called, which should be done quickly.

Bleeding from the Shoulder.—Bleeding from the part of the arm above where the tourniquet can be applied, from deep in the armpit, or from in front of the shoulder, can only be controlled completely by pressure upon the artery as it passes out of the top of the chest. If the bleeding is but slight, a pad placed directly over the wound itself and bound on tightly may control it for awhile; or, if the wound is in the armpit, the pad can be shoved up there, and the arm then bound firmly to the side. But to completely compress the artery you should resort to the following:

Treatment of Dangerous Bleeding about the Shoulder.—Pressure must be made on the artery as it passes under the middle of the collar-bone, as shown where the key is placed

at "B" in Fig. 1. The most suitable and easily procured implement to do this with is generally stated to be a large door-key; but the end of a carpenter's square, if not too broad, or the end of a blacksmith's large file will do as well or better, as you can get a more steady pressure from them. The end of whatever is selected should be hastily covered with two or three thicknesses of goods of some kind, and then pressed down steadily and firmly into the space mentioned before; namely, just above, and touching, the upper edge of about the middle of the collar-bone. While this is being done, the injured one should be lying flat on the back, and the operator kneeling at the side of his head. In case the patient is a thin person, it will not take very great pressure; but if at all fleshy, you will find that considerable force is required to sink the instrument deep enough to compress the artery sufficiently.

In case the first effort does not stop the bleeding, the point of the instrument must be moved from side to side till you do succeed in finding the right place, or more weight must be put on; for you can tell instantly the moment the artery is pressed upon, as the spurting is seen to be interrupted, and the bleeding will finally cease entirely as the requisite pressure is gradually put on. As soon as you do succeed in controlling the bleeding, you must not, under any circumstances, move the instrument, but continue to hold it there till relief comes. Such wounds generally come from

stabs of knives or other sharp instruments; and, while rare, they are sufficiently numerous to make it the duty of all to know something of the proper and only way by which the bleeding can be checked. It does not do to wait till the emergency arises, and then expect to put yourself in training for it. By studying such matters in moments of leisure, and then applying them in make-believe cases, you will fix the knowledge firmly in your mind as no other means can.

V.

BLEEDING FROM ARTERIES CONCLUDED—OF THE BODY, FOOT, AND LEG.

Bleeding from Deep within the Body.—It will scarcely be necessary to say that when any of the large arteries within the great cavities, as the chest or abdomen, are cut, it will be out of the question for you to do anything in the way of directly stopping the bleeding. Even with a skillful surgeon such an operation is a work of the greatest difficulty, and is often not entirely successful.

Treatment.—When, however, you have reason to believe that one of the large blood-vessels deep within the body has been wounded, you can do a great deal to lessen the danger by making the sufferer as comfortable as possible, and, above all, by keeping him quiet. If there is much pain, you should give a half-teaspoonful of laudanum, or two tablespoonfuls of paregoric, to a grown person, and less in proportion to younger people. As a rule, do not move such cases till seen by a physician; for the jolting necessarily attendant upon a ride of any kind can hardly fail to do harm. These are among the occasions in which a doctor should always be

summoned quickly, and know the nature of the wound to be treated, before leaving his office.

Bleeding from the Foot or Leg below the Knee.—

Bleeding from the arteries of the foot or leg below the knee can generally be stopped entirely, or greatly checked, by direct pressure over the wound itself as follows :

Treatment.—Make a pad of torn rags of some kind, and stuff this into and over the cut, and bind it firmly into place with broad bandages around the limb. These bandages should begin at the toes, and extend on up above the wound, making equal pressure all the way up. The entire limb must then be elevated as high as possible by means of chairs, pillows, or boxes, the patient lying flat on the back. However, when the cut is too extensive or too painful to be treated in this manner, or you fail to stop the bleeding by this means, you should adopt the following: Wrap some solid object, as a stone or yarn-ball, about one-half the size of the patient's fist, in a cloth of some kind, and press it firmly into the hollow behind the knee. Then, with the patient lying on the back, bend the leg at the knee so it will press hard upon the object. Hold the leg in this position, or, better still, tie it there by means of a broad bandage of some kind passing over the ankle and around the thigh near the body, and then draw the entire leg well up on the abdomen,

with the knee toward the chin. In that manner alone can this position of the leg be endured for any great length of time. The object of all this is to press upon the artery as it passes under the hollow behind the knee, and thus stop the bleeding. Any bandaging previously put directly on the wound itself should be left in place, as it will aid greatly in impeding the flow of blood.

Bleeding from the Thigh.—Any bleeding from the artery of the thigh is always a matter of the gravest importance, and, when it occurs, a reliable and swift messenger should at once be sent for the nearest doctor. While awaiting the physician, you should adopt the following method to arrest the bleeding, and should be in considerable of a hurry in carrying it out, too.

Treatment.—The patient should lie squarely on the back, while you kneel at his hips on the opposite side from the wounded limb. Now reach over, and, grasping the limb with both hands, press the thumbs into the flesh at the extreme upper part of the front of the thigh at a point about one-third of the way from the inner side; for at that place the artery leaves the abdomen, and passes under the hard line separating it from the thigh, called the groin. The dotted line in Fig. 2 plainly shows the course of this artery. In case you do not find the right point at the first trial, you

should move your thumbs about a little till you do succeed; for, however terrible the bleeding, unless the patient is very fleshy indeed, you can control it, for a while at least, in this way. There are even cases recorded in which persons have

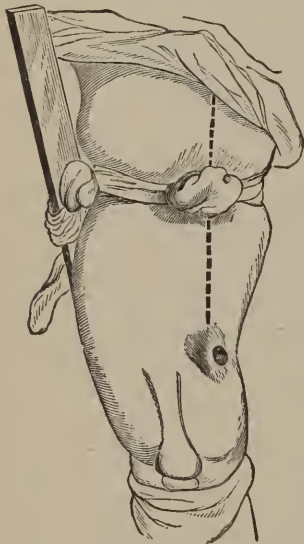


FIG. 2.

Front view of right leg with tourniquet applied to stop bleeding. Dotted line shows course of artery.

saved themselves from bleeding to death by this means. While one is making an effort to check the bleeding in the manner given above, another should procure a large handkerchief, or towel, or even a piece of rope, make a knot in its middle, and, wrapping it around the limb well up towards the body, with the knot over the artery, tie it loosely. Let a stick of some kind be thrust through between the bandage and the leg on the opposite side from the knot, and begin to twist, thus tightening the bandage till the knot sinks deep into the flesh.

This twisting should be continued, however painful it may be, till the artery is compressed enough to check the bleeding, and at the very moment you see the spurting has stopped, the tightening process should cease.

A good idea of the manner of applying this tourniquet to control bleeding from the thigh can be obtained by studying carefully Fig. 2.

After the tourniquet has been applied, the leg should be elevated and bent forward over the body. This bending of the leg at the groin, by making a sharp angle in the artery itself, will aid greatly in impeding the flow of the blood. In case the artery is cut above the point where we have directed you to apply the tourniquet, you should attempt to make pressure on the line of the groin itself at about one-third of the distance from the inner side, as there the artery passes over the bone as it leaves the abdomen. You should move your thumb, or some hard object, as the handle of a large door-key, along on the bone of the groin till you find that the bleeding is checked, and then continue to press with all your strength; for at this place no tourniquet can be applied, and the only way at all to control the bleeding is by direct pressure. Fortunately such fearful accidents are extremely rare; but all intelligent persons should have exact ideas as to the best, and, in this case, only means of saving life till surgical help can be obtained.

VI.

INJURIES TO THE HEAD AND BODY.

THERE are three great cavities of the human body, the skull, the chest, and the abdomen; and each contains important organs. Very briefly we will consider what should be done in case of injury to either of them or their contents, so that the patient may come into the hands of the physician in the best possible condition.

Injuries of the Head.—The bony skull, containing the brain, may be either penetrated or actually crushed in; the penetrations usually coming from bullets, while the breakings may be the result of blows of heavy implements, from falling and striking the head upon hard objects, or by pitching headlong from a distance and striking with the whole weight of the body thrown directly upon the head itself. Of course, when the injury is so extensive that a glance will convince any one of its gravity and that the skull has either been penetrated or broken, no instructions as to the necessity and urgency of calling a physician at once is needed, nor the importance of his learning the nature of the wound he is expected to treat before leaving his office. But what we wish to guard you against is the great danger, in apparently slight

injuries to the head, of overlooking, or considering of no importance, symptoms that may indicate the possibility of very great injury to the contents within the skull. When any one, therefore, has received a heavy blow upon the head, or has fallen so as to strike it hard upon the ground or on anything else, such a person should be carefully watched, not only immediately following the receipt of the injury, but for several days afterwards. Even if there should be no external wound at all, and he appear only stunned, and in a short time goes about his business, you should not, on that account, jump at the conclusion that he can not possibly be severely hurt. If, at any time within the next week or ten days, you find him complaining of headache, or of sickness at the stomach and loss of appetite, or if he is unnaturally ill-tempered and is unable to apply himself to business, or complains of dizziness or vertigo, you should lose no time in consulting your family physician, telling him all the circumstances connected with the case. If, in addition to one or all of the above symptoms, you notice a bloodshot eye, not due to direct violence, or, worse still, a discharge from the ear of either water or blood, you may rest assured that you probably have a case on hand of the greatest possible gravity.

Treatment. — While awaiting the doctor's arrival, in cases of injury to the head, you should let the patient lie down with the head slightly elevated; and, with any tight

clothing, especially about the neck, removed, he should be made as comfortable as possible in a cool, well-ventilated room. In almost all cases of this kind it is the right thing for you to also apply cold to the head by means of towels kept constantly wet from the coldest water you can find. If begun at all, this wetting with cold water should be kept up till the doctor comes. Beyond this you should do nothing, and especially should not give any stimulants in the way of whisky or brandy.

Injuries of the Chest.—The walls of the chest are composed of the ribs attached to the backbone behind and to the breastbone in front. Within this cavity are the heart and lungs. When any injury occurs of so severe a nature as to either break the walls of the chest or to penetrate within, as a bullet or sharp-pointed weapon, nothing that I can advise would be at all likely to be of any great service to you in directly aiding the sufferer.

Treatment.—Place the patient in bed in a half-sitting position, and see that everything is made as comfortable as possible. Don't think of probing the wound. If ribs are broken, tie a broad bandage of muslin firmly about the body, directly over them, and it will often afford great relief. If there is intense pain, give twenty drops of laudanum or a tablespoonful of paregoric to a grown person,

or one drop of the former or ten drops of the latter for each year of a child's age, every hour, till relief is afforded or the doctor comes. If possible, you should also keep cold-water applications over the injury.

Injuries to the Abdomen.—The abdomen is the largest of the great cavities, and embraces about all the lower part of the body. It contains the entrails, stomach, liver, and other organs, and, being protected on the entire front and on both sides by thin muscular walls alone, is more liable to penetrating or tearing wounds than to any other. Perhaps the majority of these penetrating injuries, even in civil life, come from bullets, while the rest are inflicted by a vast variety of instruments, such as pitchforks, hooks of all kinds, horns of animals, and parts of fast-moving machinery. Here—as was the case with similar wounds of the chest—you are expected to do nothing in the way of permanent treatment. Your main efforts should be expended in trying to carry the injured one along in the best possible condition till the physician arrives.

Treatment.—I can conceive of no kind of simple penetrating wound of the abdomen that should not have cool water applied to it continuously from the time of its receipt till the physician takes charge of the case. This can be done by laying a couple of folds of a large clean towel, or other suit-

able cloth, directly over the injury, letting it cover as large a space about the wound as it will, and keeping this wet all the time by squeezing water on it from a cloth that can be dipped in some vessel held for the purpose. Of course, if you begin this wetting process, it should be kept up till the doctor arrives. In case the wound is a tearing one, and the bowels are exposed, the same process, as described above, should be carried out with the important exception that the water used then should be very warm instead of cold, not hot enough to scald, but fully as warm as the body, or a little warmer. Also great care should be taken, especially in cool or cold weather, that the patient be placed in a comfortably warm room, and kept warm by artificial heat, applied by means of hot bricks or jugs of hot water applied to the feet. Perfect quiet should be enjoined.

If there is great suffering, opium should be given more freely in these than in any other cases. A half-teaspoonful of laudanum or two tablespoonfuls of paregoric, and proportionately less to children, every hour, till relief is afforded, is not too much.

Rupture. "Telescoping" of Bowel.—Rupture is generally the result of a hard strain of some kind. You may feel something give way in the groin, with a sharp, stinging pain, and, on examination, find a small lump there. Lie down on the back, and, elevating the limbs, see if it will

not disappear. "Telescoping" comes on in young people without any assignable cause. The child will suddenly complain of intense pain at some one point in the abdomen. This will soon be followed by persistent vomiting, while the suffering will steadily increase.

In either case send for the family physician at once, and in haste, too.

VII.

FRACTURES AND DISLOCATIONS OF BONES.

Fractures of Bones.—A few general remarks in regard to the proper course for you to pursue when any of the bones of the body are broken will be all that is needed. You can do absolutely nothing in the way of treatment. When a bone is broken, especially if it is one of the long ones of the leg or arm, a certain amount of deformity is generally present. Often it is easy to see the motion between the broken ends, and, at times, you can even hear the grating as they rub together. When, however, the bone is a short one, it may be difficult for even a good surgeon to tell absolutely certain whether a bone is broken or displaced, or both together, which is often the case. But, so far as you would be concerned, it would matter nothing at all, as your actions should be just the same in either case. As a rule, when you are certain that something serious has happened to a bone, you should remove the patient to his home while awaiting the physician's arrival, if it can be done without too much pain. Very often this saves valuable time, and thus shortens the duration of suffering; besides, the appliances usually needed in such cases can not be put on till the patient is in

his permanent quarters. General directions will be given in Article X, on the subject of moving injured persons, that will apply to cases of this kind. Each individual case, however, will require its own particular manner of handling, and will be controlled, in a great measure, by the surroundings, the means at your disposal, the distance from home, and the length of the time before the expected arrival of the doctor.

Treatment.—When the arm or collar-bone is broken, support can be given it, and the pain greatly lessened, by passing a shawl, or something of the kind, under the elbow of the injured limb; and, bringing it up before and behind, tie it rather tightly over the opposite shoulder. The part that goes up in front should include in its folds the forearm and hand of the crippled side. Lying down is usually the only position in which a person with a broken leg can be moved at all for any distance. When you do attempt anything of the kind, your efforts and ingenuity should be expended in holding the broken limb in as nearly an immovable position as possible; for the journey will be painful enough at the best. When possible, while awaiting the doctor in cases of fractured bone, cold, wet cloths should be kept constantly applied over and about the seat of the injury, as in that way the swelling will be kept down somewhat, and the pain often very greatly lessened.

Dislocations of Bones.—Dislocation of a bone consists in its slipping out of its natural position in a joint, and generally comes from some kind of violence. It always causes more or less deformity at the joint, and by the nature of this we are able to know what the trouble is. In all cases of dislocations, with three exceptions, which will be given below, no attempt should be made by the unprofessional to replace the bones, but they should be wrapped loosely in cold, wet cloths, and then managed the same as fractures, according to the directions given above, till a physician can be called. The three exceptions referred to are dislocations of fingers, the under jaw, and the shoulder.

Dislocations of Fingers.—These can usually be pulled into place by a strong person, if the attempt is made immediately after the receipt of the injury. The hurt hand should be held steady by reaching the arm about some solid object, or by running it between the rails of a fence. The person attempting the replacement, should then seize the finger in his right hand, and, while pulling with all his might, try with the thumb of his left to press the end of the bone back into its place. If done with strength, intelligence, and promptness, it will generally succeed.

Dislocations of the Under Jaw.—The most characteristic feature of a dislocation of the under jaw is the inability

to close the mouth, which stands wide open, with the point of the chin thrust forward. It usually comes from yawning or sneezing, but may come from a blow on the chin itself. By making the attempt at once you may often succeed in getting it in place, and thus save some hours of great suffering, especially if you are compelled to go a long ways for a doctor.

Treatment.—The first thing that you should do in such a case would be to cut a stick the size of the little finger of the person injured. It should be just long enough to go between the teeth of both sides of the jaws, and there it should be placed. The head now being made perfectly solid, the jaw should be seized with both hands of the operator, standing in front of the patient, the thumbs placed against the front teeth of the displaced jaw, and, using the stick between the teeth as a fulcrum of a lever, the chin should be pushed upwards and backwards. By noticing that a hollow is formed by this dislocation in front of each ear, you will see that the ends of the jaw at these points are slipped forward from their natural position, and this pushing upwards and backwards has for its object the forcing of these ends backwards and downwards into their place again. This operation has often been done by unprofessionals, and any one can do it—if he knows how.

Dislocation of the Shoulder.—This is the third and last dislocation the treatment of which should be attempted by the unprofessional, and then, perhaps, only when far from medical assistance, or when the injured one is young. The injury consists in the head of the bone of the arm slipping out of its place at the shoulder-joint. After it has occurred, the arm is very stiff, the elbow stands out from the body, and the point of the shoulder seems to stick out too far; while below it is sunken, and the head of the bone can be felt in the armpit. It may come from direct violence, and is often caused by the arm being forced up too straight, as in falling and catching hold of, or falling against, something in the descent.

Treatment.—The right way to try to replace it is as follows: If the dislocation is of the left side, remove your own boot from your left foot, and *vice versa*. Now sit down by the side of the patient, who should be flat on the back. Place your bootless foot up in his armpit, and, grasping him by the wrist and forearm, begin to pull slowly and steadily till you have exerted your whole strength for about one minute; then move his arm as you hold it, pulling all the time, away from his body a foot or so; then, while doing this, force your heel as far up in his armpit as you can; then bring the arm again quickly back to his side. In this way the head of the bone is pulled and pried back into place. If you fail once, you

should try two or three times more before giving it up as a bad job. A distinct snap will tell you when the head goes into its place. Even if you do succeed in getting it in place, a physician should always be consulted as to the after-treatment.

VIII.

GUNSHOT WOUNDS—HEMORRHAGE OF THE LUNGS— LIGHTNING-STROKE—WHEN TO GIVE OPIUM.

Gunshot Wounds.—Bullet wounds will not usually require anything different at your hands from those coming through other causes. When, therefore, the skull, chest, or abdomen is penetrated, a bone broken, or bleeding is caused by a bullet, the treatment need not vary at all from that laid down for your guidance in former articles under these particular heads. There are a few features, however, in regard to gunshot wounds that may receive some special attention. This class of wounds seldom cause much bleeding. Even when a bullet penetrates some of the large organs of the body, the danger does not lie so much in the actual loss of blood as in the injury to the tissues of the organs themselves.

On the battle-field army surgeons tell us that fatal bleeding was the exception. Bullets tear, on their way through the body, rather than cut; and any blood-vessels that they may injure are left with ragged edges, which contract and curl inward so as to form, for the time being at least, an effective plug against the escape of blood. Only a clean-cut vein or artery will bleed to its fullest capacity. The surgeon, therefore, taking this hint from nature, tears or twists

the ends of cut arteries, and in this quick way effectually controls their bleeding much easier than by stopping to tie them with thread.

There seems to be a popular belief that a bullet should always be probed for in order that the injury may be treated intelligently. Often, even physicians make a mistake by yielding to this outside clamor. Of course, at times, the course of a bullet may be traced by inserting a probe; but this will depend entirely on the location of the wound. When it is in the muscular tissue alone, such a proceeding can not do very much harm, nor is it at all likely to do a great deal of good. But under no circumstances are you to attempt any probing, especially if it is at all likely that the bullet has penetrated any of the great cavities of the body; as the skull, chest, or abdomen. You can not locate the missile in that way, and your effort can scarcely fail to do harm. It is always best if the bystanders can give the doctor, on his arrival, definite information as to the size of the ball, the position of the body when struck, the distance from the piece, and the direction from which it came; as on all these will a proper understanding of the case depend.

Hemorrhage of the Lungs.—Sometimes a person, apparently in perfect health, is taken suddenly with bleeding from the lungs. This often causes great alarm, but the fear occasioned by such an unlooked-for event is always far greater

than the actual peril calls for. It is for the purpose of giving you this assurance of the almost total absence of danger that I speak of this emergency at all in this article. Scarcely a recorded case exists of a fatal hemorrhage under such circumstances. By many physicians of eminence it is looked upon as more likely to be a benefit than an injury, inasmuch as it is often supposed to take the place of more serious troubles.

Treatment.—All that should or need be done is to let the patient sit quietly in a comfortably cool room, and, if the bleeding persists, warm the feet by means of a hot foot bath, and apply cloths wrung out of cool water to the upper part of the chest. Common salt or pieces of ice, taken into the mouth in small quantities, often seem beneficial. Concerning all such cases the family physician should be consulted in due time. Above all, convince the patient himself that the actual and immediate danger amounts to almost nothing.

Lightning-Stroke.—*Treatment.*—Efforts should always be made to revive any one knocked senseless, or even apparently dead, by lightning. Artificial respiration, as will be fully explained in the article on drowning, especially should be long and diligently practiced. Heat should be applied, and very rough and vigorous rubbing, always towards the body, given to all the limbs. During all these efforts the

head should be kept lower than the rest of the body. Harts-horn can be gently blown into the nostrils.

When to give Opium.—The sight of a person suffering intense pain must cause the desire to arise in any humane nature to relieve it as quickly and surely as possible. Fortunately we have at our command an article pre-eminent above all others for this very quality of subduing pain—opium. To be sure this drug has been abused; but, then, so has about everything else good in the world been used for evil purposes.

In any of the accidents and emergencies described in these articles, where there is intense pain, opium in some form can be given to advantage. This especially applies to cases in which a physician can not be expected to arrive for an hour or more after the injury has occurred. Remember, I say only where there is intense pain. While you may not give the opium strictly as a medicine, but only as the readiest means of relief at your command, yet, in such cases, it almost always acts beneficially in other ways. On account of the pain being lessened by it, restlessness and motion are diminished. In that way a great good will be done, and the chances of ultimate recovery very materially increased. Therefore, in cases of fracture of bones, whether there is much injury to the soft parts or not; in tearing, crushing, or penetrating wounds of the head, chest, or abdomen, and

even in dislocations of bones—in fact, in any and all cases of accident followed by great pain—I would advise you to give opium in full doses. These doses, for a large, strong man, are about as follows of the preparations of opium in common use: One-half teaspoonful of laudanum, one-third grain of morphine, or three tablespoonfuls of paregoric.

These, remember, are all large doses, much larger than would be given in ordinary cases of sickness; but when intense pain is to be overcome, it is useless to waste time with small doses. For a person about sixteen years of age, the dose should be one-half of that given above; and for a child of ten, the dose ought only to be one-fourth as large as for a man; and for younger children, still smaller doses, in proportion to the age. The dose can be repeated in an hour, if the pain is still very great, and the doctor has not yet arrived.

After the physician has taken charge of the case, and been informed of what you have given the patient before his arrival, neither opium nor any other drug should be given without his orders. Especially should opium in any form never be taken for pain or for anything else, except under the circumstances given above, without the express prescription of a perfectly reliable medical man. There is where the abuse of this drug comes in—the indiscriminate taking of it for imaginary as well as for real pain. This juice of the poppy has been styled “the gift of God” to suffering humanity, and so it must ever be as long as its use is confined to its legitimate sphere.

IX.

SHOCK—STIMULANTS.

Shock is a word used in every-day conversation ; yet to give a satisfactory definition of it is very difficult, if not impossible. Dunglison, in his Medical Dictionary, gives it as "a sudden or instantaneous depression of the organic, nervous, or vital power, . . . occasioned by the nature, severity, or extent of an injury, or by an overwhelming moral calamity." This is probably about as good as can be given, yet is not perfect by any means. Our inability to describe in words a mental condition, or anything else intangible, the meaning of which all at least think they understand, can not better be illustrated than by simply stating the fact that, of so common a disease as insanity, no definition has ever yet been written that has stood all the tests. Shock may come on from trifling causes, or it may not appear at all after the most appalling accidents or calamities. One individual may not show the slightest trace of it during or after the amputation of a leg, while another may succumb from the pricking of a pin or the sight of a mouse. In one case it may only amount to a turning pale and slight trembling, while in another it may result in instant death. So, you see, we are considering something of a very wide range of possibilities

indeed. Simple fainting is probably the mildest manifestation of shock that will require any directions as to treatment.

Treatment of Fainting.—About all that is required in such cases is the loosening of any tight clothing about the neck and waist; placing in a cool, well-ventilated room; sponging the face with water, and, most important of all, having the sick one lie down with the head as low, or lower than the rest of the body; it being well, while in this position, to elevate the feet upon a chair or box till consciousness begins to return. The object of all this is to persuade the blood to go to the brain by its own tendency to “run down hill;” for the heart, being weakened as all the other muscles are from the effects of the shock, has not sufficient strength to throw the blood to the head while the body is in an upright position. The cause of fainting, therefore, and in fact of all the other manifestations that accompany shock, is the want of a sufficiency of rich, red blood in the brain, and this comes from the enfeebled action of the heart. The circulation is not only slow in the brain, but in the other extremities, as the feet and hands.

Treatment of Shock.—Any measures for the relief of shock must be directed towards aiding the blood in its onward course, and in stimulating the heart to more vigorous action. The former can be done by rubbing the limbs, always in the

direction towards the heart, with hot cloths, and by always keeping the head lower than the body; and the latter, by slapping the chest with the hand over the heart, and the application of hartshorn, or other volatile substances, to the nostrils. In the mental form of shock, a soothing word, or an assurance of absence of danger—if coming from the right person, and with the appearance of truth—will frequently go farther in promptly effecting restoration than the most powerful stimulants. All the directions given for treatment apply equally well whether the shock comes from physical injury or from fright, grief, or other mental impressions. The object sought—the renewal of the circulation—is the same in each.

If the weather is at all cool, you should be careful to quickly place the sick one in a warm, well-ventilated room; for persons in this condition of collapse do not bear cold so readily as the well. The eminent Dr. Gross, whose opinions are always entitled to the greatest respect, says that when shock comes on soon after a meal, an effort should always be made to induce vomiting by any means available, the handiest generally being to give a pint of warm water, into which has been quickly stirred a tablespoonful of mustard or common salt. As a last resort in extreme cases, artificial respiration, which will be explained in the article on drowning, should be tried. Generally the first sign of returning consciousness to show itself will be a slight flushing of the face,

and then others will follow. After an attack of this kind, even if it only amounts to a mild faint, care should be taken not to rise up too quickly without support, or a hard fall may be the result.

Stimulants.—Immediately following, and as a part of the treatment of shock, it will be well to give some general observations in regard to stimulants. A large number of articles are included under this head; but about the only ones likely to be at your command are alcohol in the form of whisky, brandy, or wine, spirits of ammonia or harts-horn, and heat in its various forms. In my opinion, the latter, applied internally by means of teas of various kinds or coffee, and externally through rubbings with hot cloths, and hot bricks and jugs of hot water applied to the extremities, is by far the most valuable of all the stimulants in cases of collapse or shock. It is always available, any one can use it, and under no circumstances can it do harm, however rude the means adopted in applying it. One of the most serious objections to whisky or brandy in such cases is that, the power of swallowing being almost gone from the general muscular weakness, it is very difficult to get these fiery liquids down the throat. So, with any but old toppers, in about nine cases out of ten that you try to give either of them, you will have such spasms of coughing and strangling as will alarm you, thus doing far more harm than good. It

is all very well to tell children, or other persons not in the habit of using strong drink, to swallow down a cupful of hot whisky; but it is far from easy for them to do it.

I know I am teaching heretical doctrine; but I can scarcely conceive a case of this nature but what the heat and gentle stimulation contained in half a pint of hot tea or coffee would be apt to do far more good than any quantity of whisky or brandy that might be given. If whisky is to be used at all, give it in large quantities of hot water; the water will do good even if the whisky does get the credit for it. Hartshorn should be held near or wafted gently into the nostrils. Fanning the face and sponging it with cool water always does good. But your great reliance must be in the heat you will impart to the lowered temperature of the body by the means stated above—namely, hot tea and coffee, hot rubbings towards the heart, and hot applications to the extremities, and to the body also in very severe cases.

X.

CONVEYANCE OF INJURED PERSONS—SYMPTOMS INDICATING PYEMIA AND LOCKJAW.

Conveyance of Injured Persons.—It often requires much skill and ingenuity to convey wounded persons from one place to another with the least possible pain and damage. A few suggestions in regard to that matter can not, if observed, fail to do good. When very badly hurt, such as a skull fractured or leg broken, it is impossible for one to be moved except in the recumbent position. For such purposes it will be necessary for you to procure a lounge, door, broad board, or other suitable material to be used as a litter. A sheet or blanket of any kind will do if nothing more solid and reliable can be obtained. Before the patient is placed on this, it should be made comfortable by covering it with any material at hand, such as clothing, straw, or grass; care being taken to so arrange it that the injured part may be held as immovable as possible while making the journey. This litter, after being thus prepared, should be placed at the head of the injured person, not at his side, and then, while some lift him up, others should slip it carefully under him. Or, if there are not enough helpers to do this, let the

patient be carried backward till just over the litter, and then laid down gently upon it.

After you have him comfortably arranged on this, you can either place it in a vehicle or carry it, as the distance and other considerations may require. When it must be carried, the bearers in walking must not keep step, so that the jolting and swinging motion will be reduced to the smallest degree possible. It was noticeable that the Turkish sedan chair-bearers at the Columbian Fair were acquainted with this fact, and adopted it to promote the comfort of their patrons. In cases where it is not absolutely necessary for the patient to lie down while being moved, the best way by far is to let him sit in an arm-chair, and enough, and only enough, take hold of this to carry it safely, breaking step as before suggested. If a chair can not be obtained, two persons can take a stout board or piece of fence-rail, and, throwing some garments over, let the patient sit on it between them, with his arms about their necks for support. If able to stand at all, an injured person can get great help by having a friend walk on each side while he throws his arms over their shoulders to steady himself.

Symptoms denoting Danger.—Following injuries and surgical operations, and occasionally child-birth and certain forms of disease, sometimes there occurs, even when everything had seemed to be going on all right, a change in the

patient's condition that may mean the gravest danger. Unless you had been specially instructed by some competent person to look out for these possible warnings, you might overlook them or consider them of no importance. I do not call your attention to them for the purpose of suggesting the treatment, but simply that you may be able to recognize them at their earliest appearance, and lose no time in notifying the medical man in attendance upon the case.

Pyemia.—This condition is generally known as blood-poisoning or suppuration. It is always a grave complication in any case; and, to be treated with much chance of success, the physician can not be notified too quickly after the symptoms denoting its presence have made their appearance. It oftenest follows such injuries as severe fractures or crushings of bone, especially about joints, gunshot wounds, amputations, and tearing or penetrating wounds of the great cavities—skull, chest, or abdomen. It occurs also in a certain proportion of confinements, and may even appear in such diseases as erysipelas, carbuncle, smallpox, scarlet and typhoid fevers. Pyemia means that matter has become mixed with the blood; but that is not literally true, the condition really being that matter is forming and collecting at some point as a result of the disease or injury. These collections generally take place near the wound in some of

the surrounding tissues. Yet often they are found in parts of the body far away from the actual injury; as in the lung during an attack of erysipelas of the foot; or it may collect in several entirely different places at the same time.

Symptoms of Pyemia.—The indications of pyemia are generally well marked, especially to those constantly about the sick-bed. For awhile before the actual onset, the patient will be more restless than formerly; the skin will be dry and hot; the wound will look unhealthy and seem to have ceased healing, the discharge from it often becoming thin and watery; and often the countenance takes on a look of anxiety, as of impending danger. At the very beginning of these preliminary symptoms is the time for you to detect the coming danger, and warn the physician immediately. A few hours then is often worth more, as far as successful treatment is concerned, than as many days afterward. These first manifestations may last for a day or so, or only a few hours, and are at last almost invariably followed by a well-marked chill; and then pain, or a feeling of oppression, will appear at the point or points at which the matter is forming. In all cases where pyemia is likely to occur, you should carefully note first indications of pain in any part of the body, and call the attention of the physician to them at the earliest opportunity.

Lockjaw.—This is the name commonly applied to a peculiar, but almost invariably fatal, nervous disease, sometimes following wounds of various kinds. It may come on as a result of wounds in any part of the body. Yet it is more prone to follow punctured wounds of the hands and feet, especially on the bottom of the latter, than of any other kind. Exposure of the wounded to draughts of cold air, for them to lie on cold, damp ground, and also sudden changes of the weather from extremely dry to very wet, have been noticed to exert great influence in producing this strange malady. After battles in which any or all of these conditions prevail, many more of the wounded are found to be attacked with the disease than where they are absent. History informs us that after the battle of Ticonderoga, in 1758, a large proportion of the wounded, who were exposed in open boats on Lake George the entire night after the action, perished of locked jaw. It may come on a few hours after the receipt of the injury, or it may not appear for several weeks, even after the wound producing it is entirely healed; the usual time, however, being in from four to fourteen days.

Symptoms of Lockjaw.—This disease, in rare instances, comes on suddenly; but, as a rule, it is preceded by some nervous manifestations that, to the informed, clearly foreshadow its approach. These, in brief, are as follows: A feeling of indisposition and general uneasiness, with ach-

ing of the muscles, and a peculiar stiffness about the lower jaw; pain in the head, and a difficulty in putting out the tongue or swallowing. Generally the wound itself will become unhealthy in appearance and cease healing entirely. If it is possible to do anything for a patient threatened with so dire a malady, it should be tried in these first stages; and for that reason, as soon as you notice such symptoms coming on, you should not lose one moment in notifying the physician. These first signs of a coming change are quickly followed by a completely locked jaw, inability to swallow, and a sense of suffocation within the chest that is simply horrible; to all of which suffering there can come but one relief—death.

XI.

FOREIGN SUBSTANCES IN THE EYE, EAR, NOSE, AND WINDPIPE.

Substances in the Eye.—Foreign bodies usually lodge under the upper lid of the eye, and a very early removal of them will generally prevent considerable suffering and annoyance. In order to do this properly it will be necessary that you be able to turn the upper lid, which is a simple operation that all should be perfectly familiar with. To do it properly you should stand behind the patient, whose head should be lying back low enough for you to see and manipulate about the eye easily. Take the wipers of the upper lid between the thumb and index finger of the left hand, pulling outwardly hard enough to separate the lid considerably from the eyeball; then, with the long, sharpened point of a pencil in the right hand, press downwards on the back part of the upper lid, thus stretched out, till the inside shows below. Then quickly pull the edge of the lid by the wipers in the left hand upwards, turning the lid over the point of the pencil, which can then be removed, and the lid held in that position by pressing the wipers against the brow with the left hand, leaving the right free to remove the object with a fold of handkerchief. A smaller instrument, as a stiff

knitting or crochet needle, match, or wooden tooth-pick, is probably better than a pencil.

After the offending particle is removed, the eyelid will feel rough; but this will disappear if bathed for some time with cool water. Any sharp bits, as of glass or steel, imbedded in the eyeball itself should not be tampered with, but left for one more skillful and better supplied with instruments than yourself. In case of a serious accident to the eye, as its being cut, or pierced by some sharp implement, a physician can not be called too quickly. While awaiting him, let the patient lie on his back, with head and shoulders well elevated; and constantly keep compresses wrung out of cold water laid lightly over the eye and forehead. In case the eye has been burned, either by some hot instrument, or by corrosive substances, as lime or acids, it should be treated the same as stated above, after first removing all of the burning substance that you possibly can.

Substances in the Ear.—With hard objects far in the ear it is better for the unprofessional to abstain from any forcible attempts at removal. If heavy, and not fastened in very tightly, often they can be dislodged by simply turning the head to one side with the ear downwards, and jarring moderately with the hand. I have known of small objects being extracted from the ear by fastening a piece of warm wax, or even chewing gum, to the barbed point of a crochet-

needle, deftly inserting and pressing against the object for a moment till it sticks, and then withdrawing both together. However, if much force is required, you had better let it be till you can have a physician see it ; for by your manipulations you might turn a harmless affair into a very serious difficulty. Often bugs and insects of various kinds, in spite of the bitter wax placed there to keep them out, crawl into the ear and cause great torment and distress. In such cases you should turn the head with the troubled ear upwards, and pour into it glycerine and water, salt and water, or even water alone, holding it in that position for a minute or two. Almost invariably you will soon see the little creature coming out as fast as its legs will carry it. Even if it should not be able to get out, its death by drowning will end its power to annoy, and it can then be syringed out at some future time.

Substances in the Nose.—Nothing very valuable can be given for your guidance in the way of special rules for the extraction of foreign bodies from the nose. If they are out of the ready reach of the instruments at your command, you had better take the little patient—for such are generally children—to a physician's office at once. Snuff is sometimes given in such cases in hopes of expelling the offending object by the force of the sneezing which follows, and it is often

successful. Sitting with the face downwards aids efforts of this kind; for in that position we get the help that gravity can give in moving the object from its hiding-place. When vegetable substances—as grains of corn, peas, or beans—slip into the nose, and you are unable to get them out quickly, you should not fail to have a physician try his hand at extracting them as soon as possible; for you should remember that such objects swell rapidly in such places, from the surrounding warmth and moisture, and therefore, in a few hours, you will have a much larger object to remove than if attended to at once.

Substances in the Windpipe.—Any object, however small it may be, in the windpipe, is a matter of much greater importance than when in any of the passages that we have been considering. In these cases also, as in the last, the patients are almost always children. While playing with small objects, as buttons or seeds of various kinds, they take them in the mouth; and then, not being as careful as grown people, let them get too far back in the throat, so that sometimes, while in the act of breathing, one of these little objects slips into the opening at the top of the windpipe. About the first symptom of danger that the mother notices will be spasms of coughing that will not cease nor be controlled; the child turning almost black in the face,

and showing all the evidences of great distress, without the ability to utter a single intelligible word on account of the incessant coughing.

Treatment.—The only possible chance of giving any relief at all in such cases is to hold the child up by the heels, and then as it coughs, strike it good solid blows with the fist on the back, between the shoulders, in hopes of forcing the object out of the small opening at which it entered. Sometimes this succeeds, but not always. In case of failure, after a thorough trial, the right thing for you to do is to bundle up the child, and take it as fast as you can to some surgeon's office, whom you believe to be competent to open the windpipe and take the offending object out. No other course is left. Delay only increases the danger; for exhaustion from suffering will greatly decrease the chances of a successful operation. It's far better to take the little patient to the doctor's office than send for him; as there he will have everything ready, and you will also save valuable time. When done early enough, almost all such operations give speedy and permanent relief. Even if the object, such as a marble or pebble, has not actually entered the windpipe, but is too far back in the throat to be reached with the fingers, and is choking the child, a few sharp jerks by the heels, and thumping on the back with your fist, with its head downward, will generally bring it out.

XII.

BURNS AND SCALDS—FREEZING.

Burns and Scalds.—Nowhere is quick presence of mind so much needed and so useful as in the excitement surrounding a person with blazing clothing. Anything, to be of much use to the sufferer, must be done instantly; almost from instinct, rather than mature deliberation. To the credit of our human nature, I must say that in almost every instance coming to my knowledge of such casualties, some one has been found among the bystanders endowed with this excellent quality. If an accident of this kind happens to a woman—and, from the nature of her clothing, it is almost invariably one of that sex, or of very small children—and she loses self-control and either stands still or starts to run, no false sense of propriety should prevent some one near from seizing, throwing her down, and wrapping any woollen goods about the burning garments that may be at hand, a coat, shawl, rug, piece of carpet, bed-clothing, anything, excepting a sheet or other article of thin cotton or linen goods, for they, unless wet, might only add to the flames. By promptly doing this, you not only adopt the surest means of quickly subduing the blaze, but you place her in a position that will most likely

keep the flames from her face—a matter of very great importance. After the actual burning has ceased, and when the injury has been done by scalding, the treatment will be the same; the patient should be put to bed, and then, if a physician is not expected within a very few minutes, you should proceed as follows:

Treatment.—Any clothing left about the injured parts should be quickly but gently removed, by cutting with sharp scissors if necessary, but certainly not by pulling and tearing. If any washing is absolutely necessary, and as little as possible should be done, you may use for that purpose a solution of four heaping tablespoonfuls of common baking soda dissolved in a pint of warm rain-water. Any blisters should be opened near the edge, and their watery contents absorbed in a cloth or sponge as they escape. As soon as all this is done, soft rags should be dipped in sweet, castor, or linseed oil, or vaseline, if either or all together can be found in sufficient quantities. This will not often be found to be the case in private families, if the burn is a severe one; then you will be compelled to use clean, fresh, and unsalted lard, which will really do about as well as either of the others. These rags, prepared by being completely soaked in and covered, on one side at least, with the greasy substance, should be laid over the entire burned or scalded surface, care being taken to “break joints” with your cloths, so that every particle

of injured skin may have at least one thickness of goods over it.

The quicker after the accident has occurred that this dressing is put on, the better. Even if a doctor has been summoned, and is expected soon, you ought to go ahead and carry out the directions given above if in your power to do so. He would do the same if he were present, and you would lose valuable time by waiting; besides, if the injury is a very extensive one, he will have plenty to do after his arrival to see to the case in other ways than in actually doing all the dressing himself. The object of this application is to exclude the air from the burned surface, and delay can only increase the duration of suffering. These directions for dressing will apply to any burn or scald, however large or small a surface of the body it may cover, and whether it completely destroys the skin and flesh beneath, or is only severe enough to freely blister. They all should be dressed in the same way. When there is a great amount of shock following an accident of this kind, it should be treated the same as if it came from other causes, and stimulants may be given also the same. You may give opium in such cases, when there is very great pain and restlessness, the same as in other casualties—thirty drops of laudanum being a dose for an adult, and for children less according to age. The pain in extensive burns is much less than is generally supposed, and not at all so intense as if an equal amount of destruction

of tissue had come from other causes. In fact, this very absence of pain will often mislead the careless or uninformed, and cause him to think the affair of no great danger, while at the very time he is thus consoling himself the patient may actually be in a dying condition.

Sometimes it is recommended to cover the burned surface with flour, and over this place cotton batting. Do nothing of the kind. The moistened flour will cake and harden in places, and then, when you want to remove the dressing, you will find it produces pain and vexation. It is generally conceded that if the skin of one-third of the body is destroyed by burning, the case must be fatal. Slight burns and scalds are best treated with the soda-wash alone, or dry soda can be dusted over the burned surface in fine powder—this probably affording more relief than any other form of application. A very slight burn can often be cured by immediately plunging the burned member into cold water and holding it there for some time.

Freezing.—Fortunately for us, few cases of actual freezing ever occur in this country, and such as there are generally come from drunken spreeks rather than from the actual lowness of the temperature. The rule has always been in such cases to gradually thaw out any part of the body that may have been so unfortunate as to get into that condition.

That has been the practice, and appears to be known to almost everybody.

In case one of your limbs should become cold enough to be frozen, I would advise you to place it in a bucket of cool water, somewhat away from the heat of a grate or stove, and rub it with a cloth, gently at first, till the sensibility returns, and then wrap it up good and warm. While this gradual thawing out is going on, plenty of warm teas can be taken. The freezings in this country, however, scarcely ever go so far as to involve an entire limb, the extent being usually the partial freezing or "frosting" of an ear or toe. There is no doubt but in these cases the gradual thawing, so as not to injure the tissues themselves, does a great deal to prevent any bad and lasting effects following these little accidents. As in all other instances, when human endurance is required, it is best, in extremely cold weather, to abstain from alcohol in every form. Tea is far better, the Russians, in their long, cold journeys, always drinking immense quantities of it; almost all their fatal freezings coming after a free indulgence in the vile whisky of the country, called vodka.

XIII.

BITES OF ANIMALS AND SERPENTS—STING OF INSECTS.

Bites of Animals.—Every wound inflicted by the bite of an animal, of whatever kind it may be, should always be thoroughly cleansed before being dressed and bound up. Even if very slight, it should not be neglected. This is not for the sole reason of preventing hydrophobia, but all such wounds heal much better when treated in this way; and, simply as a matter of cleanliness, they should be thoroughly washed as soon after their infliction as possible. Any shreds of skin or flesh should be snipped off with a pair of sharp scissors; and then the whole can be rinsed off with strong salt-water, and dressed and treated as other wounds. The great fear of hydrophobia, coming as a result of being bitten by a dog, seems thoroughly fixed in every mind, so that, from the general alarm on the subject, one would suppose hydrophobia to be quite a common disease. Such is far from being the truth, as it is one of the rarest maladies known, probably not one physician in a thousand in private practice ever seeing a single case of it. The fear concerning it, therefore, is out of all proportion to the real danger. Our seeming indifference to the perils from other grave disorders constantly about us, as compared to our constant alarm con-

cerning this, really borders on the ridiculous. We probably stand ten thousand chances of dying from some of the results of intemperance to one of death from hydrophobia; yet, of the two, the former does not receive much more public attention than the latter.

The "daily press often contains well-written accounts of "Horrible Deaths" from rabies on the front pages, but you must look away over among the little items for an inkling of the equally awful endings from strong drink. It has been shown that the more this subject of hydrophobia is agitated in a public way, the more prevalent the disease becomes. There is a direct ratio between the two, and Paris, where the subject seems always under discussion, reports more cases by far than any other place in the world of equal population. You are a hundred times more likely to be struck and killed by lightning than you are of ever being bitten by a rabid dog, and, even when actually bitten, only once in five times does any harm come of it. The authorities of Wurtemberg collected statistics, and, of 145 persons bitten by animals known to be rabid, only 28 ever had any symptoms of the disease resulting. Is there any wonder, then, that a "system" of treatment will cure people of something they never had nor could have? Of course the Koch "Consumption Cure" and Brown-Sequard's "Elixir of Life" were easily shown to be frauds, for their utter failure could be seen by all; but the Pasteur treatment will succeed marvelously; for only about one in

twenty of those who go there were ever bitten by a mad dog at all, and, as we have about one in a hundred of their patients dying of hydrophobia, the proportion of one in five still holds good.

I will close these desultory remarks concerning rabies by quoting from Dr. Dulles, of New York, a very careful observer, who wrote in 1892: "Some of the most able and careful [that is the greatest matter] medical men are of the opinion that most, if not all, cases of so-called hydrophobia are spurious; that is, they are not hydrophobia at all. The author has studied this subject with great care for years, . . . and believes it will some day disappear, as the belief in witchcraft—which not long ago was supported by the most respectable medical, clerical, and popular authorities—has disappeared."

Treatment of Dog-bite.—In case any one in your presence is bitten by an animal supposed to be mad, you should instantly take out your knife and, if it is sharp, and the injured one will allow you, you should cut out a piece of skin and flesh large enough to include every particle that has been touched by the teeth. This is especially needed when only a slight wound has been made, or the wound should be sucked freely, if not cut out. This is not a very elegant proceeding to think of, yet there is no danger at all if your mouth is free from breaks in the mucous membrane. But,

in either case, you should immediately try to make it bleed by every means in your power; as by squeezing, washing in warm water, and, if you have the materials at hand, by *cupping*, which is the most effectual of all, and is done as follows: Procure a jar, or large-mouthed bottle of any kind, as a pickle-jar or quinine-bottle. Then take a handful of loose, dry paper, or even grass, light it, and, when blazing freely, drop it down into the bottom of the jar. In a second or so, and just as the flame begins to die out, clap the mouth of the jar right over the wound, the edges of which should be wet, and hold it tightly in place. As the fire goes entirely out, you will see the flesh begin to suck up into the bottle, and the bleeding will be increased. This should be repeated, if necessary, the jar being left on each time fifteen or twenty minutes.

It's all right, after the bleeding has ceased, for you to apply hartshorn, or even burn with nitrate of silver or a hot iron, but not before. Then, if you are at all sensible, you will dress it, and after it heals up you will think no more of it; for, after such treatment, there is no possibility in the world of anything further coming of it. †

Bites of Serpents.—We have but two poisonous snakes in this part of the world, the rattlesnake and copperhead, and they are rare. Bites from them should be sucked instantly, and a stout string, as a necktie or suspender, tied

very tightly around the limb between the bite and the body. Afterwards it should be treated as described above for mad-dog bites, making it bleed as freely as possible. Whisky at this stage of the treatment is always considered the right thing, and I know no reason why it should not be given in large quantities, if you can get the patient to take it.

This "snake-pisen" may never have cured any one in such cases; but then if you give it, and the patient dies, you will get the credit of having done everything in the world to save him. Good strong tea or coffee will do in case you can not get whisky, or be unable to get the stuff down the patient from any cause. A physician should always be summoned at once, either in snake or dog bites, as the advice I have given you is only for your guidance till he can reach the scene and take charge of the case.

Stings of Insects.—Stings of insects, bees, etc., should be treated by cold application, and hartshorn or soda rubbed into the wounds. The stings from the tarantula, coming among bananas, should be treated the same as for snake-bites.

XIV.

SUNSTROKE—HEAT EXHAUSTION.

WE have now gone over, in the preceding thirteen articles, all the accidents and emergencies that are generally classed as surgical. We now come to those called medical, the one first selected being sunstroke.

Sunstroke.—The name by which this disease is generally known is misleading, the attacks probably as often coming from heat entirely away from, as in, the direct rays of the sun. As the body cools itself by means of the evaporation of the moisture from its surface, it follows that when the air is dry this evaporation is greater; hence we can stand more heat on dry than on moist days. All horsemen know the danger of driving their teams hard on “muggy” days. It is the same with men, and workers in moist rooms, as laundries and sugar refineries, are especially prone to sunstroke. In addition to the actual heat of the atmosphere, excessive bodily and mental fatigue, and intemperance of all kinds, have great influence in bringing on attacks of this kind.

We are naturally endowed with great capacity for enduring a high degree of heat, and if the body is in a perfectly

healthy condition, and has not been abused in any way, I doubt whether sunstroke is possible in our climate. Invariably you will find that patients stricken in this way have been in bad physical condition for some time before the attack, or that they have not kept regular hours, or have been intemperate; very likely both together; their digestion has been bad, or they have been feverish and had headache, or, frequently, they have been unable from some cause to get their regular amount of rest and sleep. Indulgence in alcohol in any shape, either as an habitual beverage or only during a heated term, is recognized by all medical writers as a strong factor in bringing on attacks of sunstroke. Even a careless reader of the mortality lists in our cities can not help noticing the large number of men who wind up drunken debauches in attacks of sunstroke.

Overloading the stomach with not easily digestible food is also dangerous in extremely hot weather. In a word, in greatly heated periods, all should be extremely careful to keep body and mind in as healthy a condition as possible, for that is the greatest safeguard of all against sunstroke. The attack itself is often very sudden. The man, while at work, is seized with intense pain in the head, and often with sickness at the stomach and vomiting; his legs become weak, and he staggers; his skin is burning hot to the touch, and dry from the almost total absence of sweat; the pupils of the eyes are contracted, his eyesight fails, and he may become

totally blind; and soon, unless supported, he will fall down unconscious.

Sometimes the attack is not so severe as the one described above, nor the symptoms so well marked, the patient, in such cases, being able to walk to a cooler place for rest and treatment, or even to go home alone. At times, apparently mild cases suddenly become worse, and lapse into complete insensibility. From a light attack one often rallies by merely going into a shady place, and dashing cool water over the face, head, and chest; but generally the outcome is not so happy. The man falls down, and becomes utterly helpless, and must be carried to a suitable place for treatment while awaiting the arrival of a physician; for one should be sent for at once. Now, what should the bystanders do in such an emergency? For surely something ought to be done quickly.

Treatment of Sunstroke.—No better directions can be found than the words of Professor H. C. Wood on the subject: "In the severe, acute form, it is essential that the bodily temperature be reduced at once, and no time should be lost waiting for a physician. As soon as the patient falls he should be carried into the shade with the least possible delay, his clothing removed, and cold affusions over the chest and body be practiced. This must not be done timidly or grudgingly, but most freely. In many cases the best resort will be the neighboring pump. I believe many lives

are sacrificed by the loss of critical moments in the interval between the finding of the patient and his reaching a hospital ward. If circumstances favor, instead of the cold affusions, rubbing with ice may be practiced. The patient should be stripped, and the whole body freely rubbed with large masses of ice. In using these various measures, it must be borne in mind that the design is the reduction of the temperature; if the means employed do not accomplish this, they do no good. It must be remembered, however, that the cold douche and cold bathing are powerful remedies, and can be used too long."

As soon as you see the patient begin to come out of his stupor, you should let up a little on your cold applications. Some of the best signs of this will be his returning intelligence, his skin will not feel so hot as it did when you began, and the pupils of his eyes will begin to enlarge and look natural. In case, after you have ceased your cold applications for awhile, your patient should show signs of having a relapse, as may happen more than once, you should begin at once the bathing with cold water as before. No further directions from this on are probably needed, as by this time a physician has, or at least ought to have, taken charge of the case. You should never attempt to manage a case of this kind without medical advice as soon as it is procurable. What I have told you, should be done while awaiting the doctor; for if you

delay till he is actually on the ground, it may be that an undertaker, rather than a physician, will be needed.

Heat Exhaustion.—There is another form of prostration from heat that you may mistake for sunstroke; but it is an entirely different condition, and, above all, requires entirely different treatment. It is generally known as heat exhaustion, and is not nearly so frequent as sunstroke. It is really shock from the great heat, and should be treated just the same as described in Article IX, for the treatment of shock from other causes. The great distinction between the two that you will notice is in the skin. In sunstroke the skin will be dry, and hot enough almost to burn your hand, while in heat exhaustion it is cold and clammy to the touch. Any cold applied to a patient in this condition will do harm instead of good.

Treatment.—To such a one you should apply heat in the form of teas and coffee, or whisky and brandy mixed with plenty of hot water. That is the only thing for you to do, and you will generally find a marked change for the better by the time the doctor reaches the case.

XV.

DROWNING—SUFFOCATION—STRANGULATION.

THESE three subjects—drowning, suffocation, and strangulation—are classed together because the same condition prevails in each; the supply of fresh air to the lungs is shut off, and, in order to correct that, the same treatment is required, namely, artificial respiration.

Drowning.—In cases of drowning, the bystander should always keep in mind the great importance of time in beginning efforts at resuscitation. Not a single moment should be lost, for a very few seconds generally means life or death to the patient. Nothing should be allowed to stand in the way of your intelligent haste. You can not be too quick, nor even too rough, if expedition depends on the roughness. No false and depraved ideas of modesty ought to hinder you in beginning efforts at artificial respiration when the breathing has partially or entirely ceased, as then all will depend on getting the blood to circulating again through the lungs as well as throughout the rest of the body.

Treatment.—Any light clothing about the waist or upper part of the body should be literally jerked and cut off,

the quicker the better; anything to get it out of the way. The very instant the drowned one is dragged from the water, this work should begin. The body should, the first thing, be turned face downward, for a moment, over a small log, or a bundle of clothing placed under the breast, and the water allowed to run out of the nose and throat. This can be assisted by putting the finger in the mouth so as to open it, and then hastily passing it back over the tongue as far as possible, so as to remove any stuff that may have gotten in there during the struggles in the water. The body should be allowed to lie in this position, face downwards, but a second or so; the popular belief that there is a lot of water that must be allowed to run out being a mistake, for generally there is very little either swallowed into the stomach or taken into the lungs during the act of drowning. Instantly that the mouth and throat are cleared, the patient should be turned on the back with a broad bundle of clothing or something of the kind under the shoulders, so the head will hang with the face slightly backwards, and then artificial respiration must be tried at once.

Artificial Respiration.—The operator, kneeling behind the head of the patient, should reach over, seize both his arms near the elbow, and bring them around with a quick sweep till they nearly touch each other between himself and the patient's head. While in this position, which is well illus-

trated in Fig. 3, he should give the arms a strong steady pull, and hold them there long enough to count one, two. This is called the first movement, and is intended to draw up the ribs, thus expanding the chest, and force air into the lungs. Immediately, after counting, the arms should be returned with an outward sweep again to the side of the



FIG. 3.

First Movement in Artificial Respiration.

patient, and pressed with force against his ribs, long enough also to count two. This is called the second movement, and is intended to contract the chest and press out the air from the lungs. It is illustrated in Fig. 4.

These movements should follow each other about as often as one breathes naturally, say eighteen to twenty times per minute, and should be kept up for at least twenty minutes before giving up the case as lost. Don't waste your time

trying anything else. Unless you can induce natural breathing by this artificial process, all other measures must likewise fail.

In case there is some one else present willing to help, he should sit or kneel at the left of the head of the patient, as he lies on the ground, and, reaching with his right hand under the left arm of the operator, seize the tongue of the



FIG. 4.

Second Movement in Artificial Respiration.

patient, and pull it out far enough to cover the teeth of the lower jaw. You say it will slip off. This can be effectually prevented by covering the thumb and finger with a handkerchief, or cotton goods of any kind, which will, as long as it remains dry, prevent any slipping.

In cases of drowning you should remember that the patient is cold as if in profound shock, and that therefore artificial heat should always, if possible, be applied, except in the very hottest weather. This should be done by means

of anything hot within reach, and at the same time employ hard rubbing with some coarse cloth, always, however, towards the body. This will aid the blood again to start on its course of circulation.

Now, in order for any one to get the full benefit of this article, at the very time of reading it, he should get some friend to lie down while he practices these movements on him as a make-believe patient. In that way it will be impressed on his mind in such a forceful manner that he will never forget it.

Suffocation.—Common illuminating gas is responsible for most of the cases of suffocation, and comes as a result of ignorance or carelessness in shutting off the burners at night. Formerly, when dug and walled wells were far more numerous than now, professional well-diggers were often overcome by the heavy gases collecting at the bottoms of the wells where they were at work. The fumes from slowly burning charcoal in a close room are very dangerous.

In all such and similar cases the only thing for you to do is to hastily remove the half-dead patient as quickly as possible to a well-ventilated, but warm (if the weather is cool) room, and practice artificial respiration, as explained above, to the best of your strength, knowledge, and ability, till the doctor comes to relieve you.

Strangulation.—This form of interference with the breathing generally comes from hanging, and may be either accidental or intentional, the latter, as a rule, being attempts at suicide. As in cases of drowning, so in all cases of strangulation, and also of suffocation—you can not be too quick in cutting down the person and beginning your efforts at resuscitation. Do n't wait nor hesitate a moment. Lay the patient on the back, with a pillow, or something of the kind, under the shoulders, and begin artificial respiration, as explained above, immediately. Even if no one else is present, you must not wait. Of course you will get help, medical included, as soon as you can; but you must keep up respiration till either the patient revives or all possible hope is gone.

In connection with the subject of drowning, suffocation, and strangulation, it will be well for the reader to note carefully the remarks in Article XX, under the head of "The Coroner." By so doing, very grave mistakes can often be avoided, and possibly even lives saved.

XVI.

DIFFERENT FORMS OF UNCONSCIOUSNESS.

THERE are many causes of unconsciousness, and persons making claims to intelligence should have a general idea of some of the ways of distinguishing between the different forms. This is not always easy to do, especially if the patient is found in that condition and nothing is known of his previous history. But even then you ought to be able to form a pretty correct decision as to what ails him; at least you should know how to avoid making any either serious or ridiculous mistakes. In case you were to find a man lying in the fence-corner, utterly unconscious, it would not be much to your credit if, after looking at him, you should come to the conclusion that he was not very badly off, and, on returning in an hour afterwards, find him dead. Neither would it flatter your vanity very greatly, if, on finding one under similar circumstances, you should run a horse half to death to bring a doctor, only to find the unknown had slept off his drunken spree and walked away during your absence.

I believe the best way to give you an idea of the most prominent symptoms of each will be to take them up one at a time, and examine each separately, but of course it

must be briefly. In that way I may be able to set you thinking on the subject, which must be the great object of all proper teaching; for with thought on a subject you can do much; without it absolutely nothing. The main purpose of these articles has all along been to try to turn your mind towards such things as are there discussed, and in that way benefit; for all must see that in so short a space nothing can be given in full—only outlined.

When a person is found unconscious, quite a number of indications that may be examined will aid you in determining the probable cause of his present condition. Among those that you should specially look into are the following:

The Surroundings.—You should see whether there are signs of an accident, or evidences of any struggle about the man. You should also look for any bottles or weapons lying in the vicinity, and notice whether there are tracks of any other person leading to or away from the spot.

The Head.—Examine the head for cuts and dents in the skull, or other evidences of violence.

The Breath.—This should be noticed, as it will generally furnish the surest witness as to whether the man has been drinking or not.

The Pupils of the Eyes.—Be sure to look at the pupils, and notice whether they are too small or too large, and whether one is larger than the other. Also, see whether

they quickly become smaller when you lift the lids and let in the light, or remain immovable.

The Pulse.—The pulse should always be counted, and see whether it is faster or slower than seventy to the minute, that being about it in health.

The Breathing.—Notice how often the unconscious one breathes, about sixteen to the minute being the average in health.

The Mouth.—Look whether there is any froth or blood in the mouth, and whether the tongue is bitten or not.

The Ear and Nose.—Notice whether any blood or watery fluid is escaping from either.

The Face.—Note whether the face looks natural or is drawn to one side.

The Skin.—Feel whether it is hot or cool, moist or dry, to the touch.

The Arms and Legs.—Lift up one at a time, and see whether, on letting go of them, they drop lifeless or go down slowly.

The Habits of the Patient.—In case you are personally acquainted with the patient when well, and know his habits, you should use that knowledge in determining the probable cause of his present condition.

Now let us collect together the prominent symptoms of each form of unconsciousness.

Stupor of Drunkenness.—The characteristic odor of alcohol, in some of its forms, will almost always be present in the breath or on the clothing. The body will be limp and the pupils of the eyes generally widely dilated. Hallooing in the ear, or a few sharp raps on the bottom of the feet with a stick, policeman fashion, will at least partially rouse him. Often a bottle near him, or in his pocket, will give his condition “away.” Care, however, should always be exercised in such cases, even when all indications point to a pure case of dead drunk; for a man, when drunk, or even innocently carrying whisky, may meet with an accident, or be stricken down with some serious disease. In fact, such is often the case, his condition predisposing to such misfortunes.

Apoplexy.—In true apoplexy a blood-vessel in the brain has broken, and we have a very serious condition indeed. You will find generally the face flushed, the eyes red, and often you will notice that one pupil is small and the other large. One of the most constant and characteristic symptoms of this condition is paralysis on one side, generally the right. Lift up the legs and arms, one at a time, and let them fall. If some of them go down slowly, and the others drop perfectly lifeless, you may, with good reason, suspect this form of brain trouble. If the face should be drawn to one side, you may then be sure you have a genuine case of apoplexy to deal with.

Injuries to the Head.—Outside wounds will show for themselves what the trouble is. The one most liable to mislead is fracture of the base of the skull, often gotten by pitching headforemost from a horse or vehicle. You will have profound unconsciousness, but the injured one may be rolling about on the ground and moaning deeply. The pulse will be feeble and hardly perceptible. One of the surest signs of this trouble is blood or water escaping from the ears or nose. This is not always present, but when it is, your gravest fears should be excited, for few recover from such an injury. For your temporary treatment of such cases you should consult Article VI.

Sunstroke.—The state of the weather will indicate to you the possibility of this form; and the condition of the skin and other symptoms, as explained, with the treatment, in Article XIV, should be your guide when you suspect sunstroke.

Opium-Poisoning.—Unconsciousness from an overdose of opium, either from accident or with suicidal intent, is quite frequent, and will be fully explained in the next article, with the appropriate treatment.

Epileptic Fits.—If you know the person to be subject to such attacks, the case will be easily placed. Almost always

there are biting of the tongue and frothing at the mouth. After the violent part of the seizure is over, the patient can be roused, but will be dazed and scarcely know where he is.

Of course there are other causes that may produce unconsciousness, but we have gone over such as you are likely to meet. In all such, when anything serious seems to be the matter, you should send for a physician at once, and in the meantime see that neither the patient himself nor any over-officious person does him harm. When you are certain of the actual condition, you should not hesitate to carry out the treatment, as directed in this and other articles, that may be applicable to the case.

XVII.

OPIUM AND OPIUM-POISONING—OTHER VEGETABLE POISONS.

Opium, from its extensive use as a medicine, and the danger and frequency of accidents from it, justifies us in giving it a fuller notice than the other substances coming under this head are entitled to. Little incisions are made into the unripe capsules or pods of the white poppy, and from these cuts a juice flows, which, as it becomes partly dried, is collected together. This is opium. The poppy does not thrive in this country, although it has often been tried; almost all of our opium coming from Turkey and countries farther East. It reaches us in the form of lumps, containing a pound or more, and is always worked over and treated in various ways before it is ready for use. In whatever form, however, it is found, its effect always depends on its peculiar property of easing pain and producing sleep.

The forms of opium in common use, with the usual dose of each for an adult, are as follows: Powdered opium, one grain; morphine (sulphate of morphia), one quarter of a grain; Dover's powder, ten grains; laudanum (tincture of opium), and the deodorized tincture, each thirty drops; paregoric, two tablespoonfuls. Opium is also the active in-

gredient in almost all "children's drops" and "soothing syrups" sold in the drugstores. It must be remembered that children do not bear opium as well as grown people, even in doses small to correspond with their ages.

Opium-Poisoning.—Opium in its various forms is one of the most common causes of death from poisoning, and it may come as a result either of accident or from suicidal intent. A case of opium-poisoning has so many characteristic features that it is not, as a rule, hard to distinguish. Within a short time after taking a poisonous dose the individual will become drowsy, and will be both unwilling and unable to rouse himself up. The length of time in which it takes opium to act depends in a great measure on whether the stomach is full or empty when the dose is taken. If taken just after a meal, it may be almost an hour before the full effect is produced; but when taken on an empty stomach the result may follow with alarming rapidity. So, in such cases, you should always, when possible, find out the condition of the stomach when the drug was swallowed; for not only the treatment, but the chances of recovery, will depend largely on that point.

After unconsciousness has fully come on, or even a while before, by looking into the eyes you will notice one of the surest and most constant signs of opium-poisoning that we have. It is the size of the pupils, which you will find con-

tracted down till they are no larger than pin-heads. Hardly ever is that sign present in any other condition, and you can rely on it above all others. Another characteristic feature, always present and easily noticed, is the altered style of the respiration, the patient breathing very slowly, only five or ten times per minute, and even these grow fewer as the stupor becomes more profound. The breathing itself seems more like sighing than the natural respirations of health. Therefore, with these two signs taken together—the pin-head pupils and slow breathing, and other indications not contradicting nor showing injury of some kind—you may be morally certain that you have a case of opium-poisoning, and should lose no time in sending for a doctor by a messenger who will be sure to inform him of the nature and urgency of the case. Of course, any empty laudanum-bottle, or other evidences of the drug having been used, will aid in confirming your opinion. You should at once, while awaiting the physician, adopt the following:

Treatment of Opium-Poisoning.—In almost every case it is best to begin all treatment by freely vomiting the patient, even if the drug has been taken several hours. A tablespoonful of salt, or as much ground mustard, or both together, quickly stirred into a pint of warm water, is the best and quickest means of doing this, and is always obtainable.

This should be forced down at once, by holding the nose and drenching, if you can not do it by any other means. You need not be particular about hunting clean water, either; for greasy dish-water or wash-water of any kind will do, which, by its very repulsiveness, if the patient is able to notice, will aid in giving it quicker effect. After vomiting has been freely induced, you should at once begin the giving of the strongest coffee you can possibly get down him, and in pretty large quantities. While giving this coffee, you should at the same time be walking the patient about the room, or even out of doors, if possible. This treatment, the giving of strong coffee and walking the patient about so as to keep him awake, should be kept up till the physician arrives. This is all you can do, and all you should attempt to do.

Vegetable Poisons.—There is a large number of vegetable substances that are poisonous; but to try to classify them or to describe their different properties, would only confuse. Among them are strychnine, poisoning with which brings on convulsions, with terrible spasms of the muscles, especially of the legs and back, and, in some respects, resembles lock-jaw. There are also belladonna, or deadly nightshade, that widely dilates the pupils; hemlock, or conium; “Jimson” weed; aconite, or monkshood; toadstools, and perhaps others.

Treatment.—In cases of poisoning from these or similar substances, as canned goods or decayed meats, the first thing that you should do is to vomit freely, and in that way get rid of any poisonous substance that may be left in the stomach as quickly as possible. After that, you can not do better than give good strong tea or coffee, and thus sustain nature till it can throw off the poison and its effects. Do n't give whisky, nor pour anything else into the stomach. None of these is likely to be at all dangerous, excepting strychnine, and that is not often taken. Even in a poisonous dose of that, the treatment that I have given would be about as likely to do good as anything else you might be able to employ. However, in none of the cases, excepting opium-poisoning, is it best to walk the patient about. He should be kept quiet, and if there are any signs of great depression or shock, you should employ heat and use other means to sustain the vital forces. In all cases where the symptoms seem at all dangerous, a physician should be summoned in plenty of time.

Poison Ivy and Poison Sumac.—There are two plants indigenous to this part of the country that are poisonous to the skin, from touching them, but are never taken internally. They are the poison ivy and poison sumac. The former is usually found along old fence-rows, or about tree-trunks, and is generally confounded with the Virginia creeper. It can

be distinguished from that harmless plant in that its leaves are in bunches of three instead of five, and the edges are smooth instead of notched as with the creeper. Its berries are white, while those of the Virginia creeper are dark-blue. The poison sumac looks like the common sumac; but the poison variety has but few leaflets on a stalk, and they are smooth-edged, while the common variety has fifteen or twenty rough-edged leaves on a stalk. In both the poisonous varieties you will notice the leaves are *smooth-edged*, while the harmless ones are notched. My advice is to keep away from the poisonous varieties; but if caught, apply cloths wet with water in which has been dissolved large quantities of common baking-soda, and if that does not cure, consult a physician.

XVIII.

MINERAL POISONS, ACIDS, AND ALKALIES.

UNDER this head we will try to group all other poisons than vegetable. It will be impossible to observe much order of classification ; and while a few of the more common will be particularly mentioned, in the main the directions will be general rather than special.

Unknown Poisons.—In probably one-half of the cases of poisoning met with, you will not know for a certainty what the poisonous substance was. So far, then, you will be in the dark, and the best you can do will be to judge by the symptoms as to what will be the best thing to do. Opium-poisoning you will probably know, also strychnine-poisoning. If you should see the lips, mouth, and tongue burned, either black or white, you could be certain that some of the strong acids or alkalies had been taken. If severe vomiting were present, and no signs of burning about the mouth, you would suspect either some of the forms of arsenic, or one of the various kinds of vegetable poisons. But it is not at all likely that you would be cool and collected enough to analyze all these different symptoms and come to a defi-

nite—and always correct—conclusion; so a few general directions will be in order

In case you know a person has swallowed something believed to be poisonous, the best thing you can do is to vomit that individual as quickly as you possibly can. In that way you will free the stomach of the poisonous substance, and thus take away its power to do harm. Any one can see that the sooner this is done, the more likely is it to be of benefit. By far the handiest and best means of bringing on immediate and free vomiting is a pint of warm water, into which has been stirred a tablespoonful of either salt or mustard, or both together. This dose can be repeated, if more vomiting is thought to be needed. Afterwards, if there are any signs of burning about the mouth, or the stomach seems weak or sensitive, you can give milk alone, or milk with whites of eggs stirred up in it, or flour and water, or any kind of oil, as sweet or sewing-machine oil. In case there is shock or signs of collapse, you ought to apply heat in the form of rubbing with rough, hot flannels, hot bricks, or bottles of water to the feet, hot blankets wrapped about the limbs, and hot teas and coffee. If the mouth and throat are burned by the poisonous substance, you should not think of giving whisky or brandy; but, otherwise, you can give them for their stimulating effect, diluted, as usual, with plenty of hot water. If the case seems at all dangerous, do not fail to send for a doctor as soon as you can.

Chloral (Chloral Hydrate).—The symptoms of poisoning by this sleep-producing drug are very similar, in some respects, to those of opium. You will find the slow breathing and profound stupor, but not usually the small pin-head pupils, although they are generally smaller than in health. The same treatment should be adopted as in opium-poisoning; vomiting, strong hot tea and coffee, with other stimulation when there is much depression.

Arsenic (Arsenious Acid).—The article generally known as arsenic is a bluish white powder of a sweetish taste. Arsenic is also in Paris green, Scheele's green, and Fowler's solution, and is the poisonous agent in many insect and vermin powders, as Rough on Rats, and is found in some green colored wall and toy papers. Taken into the stomach, it almost always produces intense, burning pain, vomiting, and purging. In such cases, the vomiting should be encouraged by large draughts of warm water—dish-water is fine for this purpose. As soon as possible, whether the vomiting has ceased entirely or not, you should pour down large quantities of milk and beaten eggs. If there are signs of collapse or shock, you should stimulate as for shock from other causes.

Corrosive Sublimate.—This substance is white and coarse-grained, but is usually in a colorless solution when taken by accident, as it is much used by physicians, dissolved in

water, in surgical cases for cleansing wounds and instruments. Free vomiting should always be induced as soon as possible, and strong tea should be at once given in large quantities, as the tannic acid contained in all teas will neutralize the poison that may still be left in the stomach. Milk and the white of eggs—the standard remedies where the lining of the stomach is injured—may also be given.

Lunar Caustic (Nitrate of Silver.)—This may be taken by children through mistake in various ways. In such cases, give common salt, and plenty of it, in water, or even dry, as quickly as possible. Salt instantly unites with the caustic, and it at once becomes harmless. The salt water will also produce vomiting, and in this way will be doubly beneficial.

Strong Acids.—The acids liable to be taken by mistake in poisonous quantities are sulphuric (oil of vitriol), nitric, muriatic, and carbolic. These strong acids do their injury by burning any parts of the body that they may touch; hence the lips, mouth, and throat suffer fearfully when they are swallowed.

Treatment of Poisoning by Acids.—Stir up large quantities of common baking-soda or common soft soap into milk or water, and give immediately. Hartshorn, a tablespoonful to a pint of water or milk, will also do. In case you can get

neither of these, you should pour down any fluid you can find—water, milk, or oils—in hopes of diluting the burning stuff. After you have thoroughly neutralized or diluted the acid, and the stomach is full of the liquids swallowed, you can then give warm water, adding salt or mustard if necessary, to induce vomiting. If there is shock, you should treat it as coming on from other causes. You can also give whites of eggs in water, or flour and water, to quiet the irritated stomach after the vomiting.

Strong Alkalies.—The alkalies that are usually taken in poisonous quantities are concentrated lye, spirits of ammonia, or hartshorn, caustic soda, and caustic potash. These, the same as the strong acids, burn the lips, mouth, throat, and stomach, when swallowed.

Treatment of Poisoning by Alkalies.—Give either large quantities of oil or vinegar, or both together. Any oil or grease will do. The main thing is to give it quickly. The acid vinegar neutralizes the alkali, while the oil unites with it to form a soap, in either case rendering it almost harmless. In case you can get neither of these, give any fluid you can find, especially milk or water, with eggs or flour stirred up in it, or even water alone, rather than nothing. Afterwards treat the same as for the after effects from acid-poisoning. In either case, however great the shock, do not give whisky or brandy, but bland fluids instead.

XIX.

DOMESTIC EMERGENCIES—SUDDEN INSANITY.

As was stated before, these articles are not intended to be of the "every-man-his-own-doctor" style; therefore, nothing will be discussed unless it be in the nature of accident or emergency that must of necessity receive some kind of immediate treatment. Very few forms of disease come under these heads; almost all can wait a little while without very great danger or suffering till a physician can be called.

When any one is taken suddenly ill, in addition to sending for a doctor you should see that nothing in the meantime is done whereby the case is made worse than it otherwise would have been. When the attack begins with a chill—and most of the acute inflammations of different parts of the body do begin either with a chill or chilly sensations—you should put the patient to bed at once; and this should be a good warm one, if the weather is at all cool. If there should be signs of inflammation in any of the internal organs within either of the great cavities, you will do well to apply heat to the extremities by means of hot bricks or bottles of water wrapped in shawls or blankets.

Beyond giving warm or cooling drinks, whichever may be most grateful to the patient, it will be better for you to

do nothing in the way of medication. In case there should be intense pain in any of the organs, and you are certain that the physician can not be expected within a couple of hours or so, you will be justified in giving moderate doses of opium, about twenty drops of laudanum, or a tablespoonful of paregoric to a grown person, and for a child one drop of the former or ten drops of the latter for every year of its age over three, below which age no opium should be given without the direct orders of a physician.

Cholera Morbus.—This fearfully painful affection has a very inconvenient way of coming on at night-time, and is characterized by intense pain in the abdomen, accompanied by vomiting and purging. While waiting for the doctor, the following should be your

Treatment.—If the attack come on soon after a meal, vomiting should always be encouraged by giving warm water freely; and then, after the stomach is cleared of all indigestible materials by the vomiting induced in this way, or of its own accord, you may give a half-teaspoonful of laudanum or tablespoonful of paregoric. Give just after vomiting; and, in case the medicine is immediately vomited up, you can repeat the dose once, but not oftener. If relief is not obtained in half or three-quarters of an hour, you can repeat the dose. You should also apply heat to the abdomen

by means of cloths wrung out of water almost hot enough to burn, constantly repeated. Heat can also be applied to the feet. Water can be given in small quantities, or bits of ice can be held in the mouth. The wisest way, however, to manage these painful cases of indigestion is to avoid them by being careful as to diet in hot weather, for almost invariably they come on as a result of imprudence in eating or drinking during the warmest months of the year. Very often, when one is weary from work or anxiety, or in an enfeebled condition from some other cause, things will disagree that could be partaken of at other times with impunity.

Croup, of which the dangerous form is very rare, can be treated the same as for inflammations of other organs: heat to the feet, and in a warm bed, in a well-ventilated room. A cold, accompanied by a peculiar hoarse, barking cough, always precedes, for a day or more, the only kind of croup that need give you any serious alarm, and, during that time of warning, you will have the opportunity of consulting your family physician.

Insanity.—Very few cases of insanity occur without their coming having been heralded by characteristic symptoms in plenty of time to give full warning. When you notice any sudden or marked change in the habits or disposition of one of the members of your family, or among your

friends, the safest way will be for you to speak to the family physician in regard to it. Of the dangerous forms of insanity, one of the earliest and most frequent symptoms is a proneness of the individual to suspect the motives or friendships of those about him. This, or other perversions of the natural disposition, is always present for some time, often months, before the actual outbreak; the intelligence being able, during that period of invasion, to control and keep in check any inclination to act upon such false impressions. Finally, these delusions become too strong to be subdued or concealed any longer; the judgment is overcome, and the person speaks and conducts himself from his insane standpoint alone.

There is but one form of insanity that need be mentioned in particular in these articles, and that is what is universally known as

Puerperal Insanity.—This form of mental trouble, as the name indicates, follows childbirth; and I call special attention to it for the purpose of pointing out its early symptoms in hopes that, should the occasion ever unfortunately arise, you may be able to foresee and avoid some of the dangers that often attend such attacks.

This form of insanity may come on any time within two or three months after confinement; but it usually appears during the first fourteen days. Of these attacks, nearly one-

half follow the birth of the first child. So far as known, the character of the labor, as to whether it be easy or difficult, exerts no influence on the production of the disease. There is a very peculiar train of symptoms generally accompanying puerperal insanity, and I will give them in the order of their importance and frequency.

Symptoms.—The patient suddenly becomes obscene in her talk, although formerly she may have been eminently proper in her conversation. While this symptom may vary in degree or character, it is hardly ever absent entirely. She becomes totally indifferent to the child, and pays no more attention to it than if it were not in existence. The secretion of milk almost entirely ceases. Soon she begins to actually hate those about her, especially her offspring; and the husband, however mild and meek he may be, is sure to come in for a full share of her abuse and vituperation. Her outbursts of uncontrolled frenzy, entirely unhampered by any orthodox ideas of propriety or polite language, are simply awful. These are the cases that often startle a community with acts of violence, such as infanticide or suicide. Such patients should never be left alone for a moment. Even if they do not attempt to destroy themselves or others, they may, and often do, slip away from their rooms and wander off, causing great anxiety and a world of trouble.

Of course, if you are able to recognize these beginnings of

an attack of dangerous insanity, you will always be on your guard in time. Upon the appearance of the very first symptom you should not fail to inform your physician at once. This will be especially necessary from the fact that these indications may not appear till several days after the medical attendant has ceased his regular visits, and can not therefore observe the case for himself. He will be able best to decide then what should be done. As a principle, I think it advisable to refrain from sending one to an asylum till it is perfectly clear, from all the surroundings, that the patient can not be properly treated elsewhere.

XX.

EMERGENCY SUPPLIES—PULSE AND TEMPERATURE— SIGNS OF DEATH—THE CORONER.

Emergency Supplies.—Every family should have a special box or drawer in which to keep medicines, and in this can also be placed other articles for use in accidents and emergencies. While this should be kept locked, or at least out of the reach of children, it ought not to be so carefully secured that too much time and trouble will be required to get into it when actually needed. Within this receptacle should be kept the following articles: A supply of soft old cotton and linen rags; a roll of good adhesive plaster; a small can each of common soda (bicarbonate), mustard, and vaseline; some four-ounce bottles containing whisky (best), hartshorn, turpentine, and paregoric; and an ounce bottle with laudanum, or, better still, the deodorized tincture of opium, which can be given same as directed for laudanum. It will be well also to have a clinical thermometer, the cost of a good one being about two dollars, and any other articles that may suggest themselves to you. All the bottles should be plainly labeled in large letters, and the laudanum and paregoric should be marked *poison*, and the doses written for the different ages.

All the members of the family should know how to count the pulse and respirations, and be able to take the temperature with a thermometer.

The Pulse.—The frequency with which the heart is beating is ascertained by counting the pulse at the wrist. Age, sex, and other causes influence this rate; but in health the average number of beats per minute is about as follows:

AGES.	MALES.	FEMALES.
2 to 7 years.....	96	98
7 to 15 “	80	90
14 to 30 “	74	80
Over 30 “	70	78

At birth the pulse is very rapid, about 130 per minute; but this gradually diminishes till, at the end of two years, it is only 100. An increase of fifteen beats over that given in the above table will ordinarily show a slight fever, while an increase of thirty will indicate considerable elevation of temperature. The pulse alone, however, is not a sure guide as to the presence or absence of fever. The useful little instrument called the thermometer, however, can always be relied upon to settle that point.

The Temperature.—In perfect health the temperature of the human body is between 98 and 99 degrees. In ordinary colds it runs up one or two degrees; but unless something

of this kind is known to be the cause, an increase of that much, if continued for any length of time, generally indicates disease that should be attended to. In ague, with chills and fever, the temperature often runs up to 105, or even higher; but, unless that be the cause, such great heat of the body would indicate imminent danger. To get the exact temperature, you should place the bulb of the thermometer well under the tongue, and let it remain there for at least three minutes. In case of suspected illness, you can, in this way, ascertain whether there is any fever present or not, for all inflammations are accompanied by a rise of temperature; but after a physician has been called, you should leave that to his directions alone.

Signs of Death.—Sometimes it is very important for bystanders to know whether death has actually taken place or not. In cases of doubt, the pulse is an unsafe guide, being at such times often too feeble to be felt. You should place your ear close against the left breast, and listen for the beatings of the heart, and, at the same time notice whether the breathing has ceased or not. If still unsatisfied, take a mirror or any polished steel, as a knife-blade, and hold it close in front of the nose and mouth. If no moisture forms on it within a few minutes, you may be certain that life is extinct. In death the eye soon becomes glazed, the upper eyelid falls so as to partly cover the eyeball, the

under jaw drops slightly, and the temperature of the body soon falls to that of the surrounding atmosphere. Of course, as soon as decomposition sets in, that will settle all doubts; for that is the final and infallible sign.

A widespread belief prevails among many good and otherwise intelligent people that there is some danger of being buried alive. How such an accident could possibly happen in any civilized community I can not conceive. Dr. Dulles, of New York, a reliable gentleman, for years followed up all reports of this kind, and during that time did not succeed in tracing a single one to anything resembling a bare possibility, much less a probability. They were all vague newspaper reports, with grief and unreasonable fears, and often only dreams, as a starting-point. Sometimes when, for any purpose, the dead are exhumed, they will be found disarranged, and then the ignorant or mischief-loving will jump at the conclusion that they came to life after burial. In carrying, after being placed in the coffin; or in lifting into or out of the hearse; or lowering into the grave this displacement could have easily been caused; and the distorted appearance of the features, from the effects of decomposition, might readily add anything needed to a lively and receptive imagination.

For years, in many of the large European cities, it has been the practice to place ingenious apparatus, as well as to carefully watch, for the purpose of detecting any signs of re-

turning life in those supposed to be dead; but, of the hundreds of thousands thus treated, not one has ever given a single token of reanimation. Therefore, if there is any satisfaction in knowing it, I feel warranted in asserting that, when once you have been buried, even upon the certificate of death of a doctor of only ordinary qualifications, you will be dead for good, so far as this world is concerned at least. Do n't believe any such foolish stories that you may read or hear, for such an occurrence is absolutely impossible where the forms of burial usually observed by us are at all carried out.

The Coroner.—When a dead body is found, or any one dies from probable violence of others, it is your duty to notify the coroner or some justice of the peace, who, in certain cases, can act for him. The great respect for law, so inherent in the Anglo-Saxon race, has often led to grave mistakes, however, by a misunderstanding on this point. Many instances are recorded in which the belief that the coroner must be notified in cases of *supposed*, or *possible*, as well as *actual* death, before anything should be touched or done, *has resulted in the death of persons who might otherwise have been saved*. This has oftenest occurred in cases of drowning and hanging, the bystanders not daring to take the individual from the water, or cut him down, for fear of being, in some way, held liable for the death that might occur.

In Ohio there is no law at all on the subject, and if you never notified the coroner or any one else, or even if you should take the body away and bury it, you could not be legally molested for so doing. It is a duty you owe humanity in such cases to go and examine the body, and find whether there is a particle of life remaining, and whether there is any chance of resuscitation by artificial respiration or any other means, and if there should be, to use them till all reasonable hope is gone. THEN, AND NOT TILL THEN, SHOULD YOU WASTE TIME IN HUNTING UP THE AUTHORITIES; FOR THEIR DUTIES CAN ONLY BEGIN AFTER YOURS HAVE ENDED.

The End.

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